BENCHMARKS

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Computing and the Law

By Claudia Lynch, *Benchmarks* Editor (lynch@unt.edu)

When I first wrote about this topic in the summer of 1993, I noted that "computing for the masses is a relatively recent phenomenon."[1] In fact, "the original IBM PC was only introduced in 1981, which was the same year that BITNET became operational. ARPANET (parent of the Internet) started in 1969, but it wasn't used by the general public until after 1983, when it split into two networks, ARPANET and MILNET." One should not be surprised, then, that the laws relating to the use of computers and computer networks are still evolving.

Laws dealing with computers and their uses are often confusing, conflicting, and/or not very well thought out. The purpose of this issue of *Benchmarks*, therefore, is the same as it was when we focused on "Computing and the Law" in 1993 — to make you aware that there *are* legal issues involved with computer usage.

University Policy

The *University Policy Manual, Volume II Administrative and Fiscal* has a section on computers that contains various policy statements about computer usage on campus. According to the "Computer Resources Security Policy" statement (August 23, 1991, pg. 1 of 7):

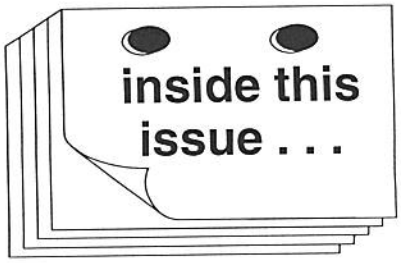
All use of computer resources is subject to federal and state regulations and laws, including, but not limited to: The Texas Computer Crimes Statute (Section 1, Title 7, Chapter 33 of the Texas Penal Code); Federal Copyright Law, Title 17, Section 117; and the Family Educational Rights and Privacy Act of 1974.

"Computing resources" are defined as "any and all computerized institutional data, computer hardware assets, and computer software assets owned or licensed by the university."[2]

[1] "Computing and the Law," *Benchmarks* Volume 14, No. 4, Summer 1993, page 1.

[2] "Computer Resources Security Policy" statement (August 23, 1991, pg. 2 of 7) in the *University Policy Manual, Volume II Administrative and Fiscal.*

Please see **Laws** on page 3.



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☆ UNT COMPUTING CENTER ORGANIZATION AND FACILITIES ☆

Computing Center Support Services are available in the Information Sciences Building (ISB), Room 119; phone: (817) 565-2324 (TDD 1-800-RELAY-TX). You can contact Support Services via E-mail at HELPDESK (WPO), #CC1/HELPDESK (P-Mail), or HELPDESK @ UNT.EDU (the Internet). Computing Center service divisions:

☐ **Academic Computing Services:**
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- Mainframe User Services
- Research and Statistical Support Services
- VAX/UNIX Systems (817) 565-4161

☐ **Mainframe Technical Services:**
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- Computer Operations

☐ **Administrative Computing:**
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- Database/Central Programming Support
- General Data Systems
- NT/UNTHSC Fiscal Data Systems
- NT/UNTHSC Payroll/Personnel Data Systems
- Student Records Data Systems
- Student Services Data Systems
- Voice Response Applications

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- Microcomputer Application Support
- Network Systems Support

☎ CONNECTING TO UNT COMPUTERS ☎

Host System (OS) Internet Address	**Calling Area:**	*Denton Local Lines*		*Dallas Metro Lines (based in Lewisville)*	*Ft. Worth Metro Lines (based in Keller)*
	Phone Number:	565-3989	**565-3300**	**214-221-0059***	**817-337-0063***
	Speed (bps):	2400 - 14,400	300 - 2400	2400 - 14,400	2400 - 14,400
		All dialup lines use **8** data bits, No Parity and **1** Stop Bit			
Academic Mainframe (CMS, Academic COMPLETE) vm.acs.unt.edu (CMS)		Choose a host from the menu. If the host is not in the menu, type: **telnet** ***internet.address.here*** (substituting the correct Internet address).			
VAX (VMS) vaxb.acs.unt.edu					
Sol (UNIX) sol.acs.unt.edu		Some software and/or file transfer methods require you to disable the terminal server escape sequence, type: *stty tesc none*			
Jove (UNIX) jove.acs.unt.edu		*To avoid long distance charges, do not dial a 1 before the metro line phone number. When dialing from outside the metro service area, please consider using the Denton local lines.			
Gopher gopher.unt.edu login: gopher (Do not use this if you have an ID on Jove, Sol, CMS or Ponder.)		To go to the telent comand prompt, press <CTRL]> Typing **quit** will close your session.			
WWW www.unt.edu login: www (Do not use this if you have an ID on Jove, Sol, CMS or Ponder.)		**Etiquette for dialing up the UNT Host Systems:**	* Please do not "camp on" the dialups. There are more users trying to use the dial-up lines than there are phone lines. ***Please*** hang up when you are finished.		
Ponder (Computer Sciences Sequent) ponder.csci.unt.edu			* If you are a 2400bps user, please try to call the 565-3300 lines **before** attempting to call 565-3989.		
UNT Libraries' on-line card catalog library.unt.edu					

HOURS FOR UNIVERSITY OF NORTH TEXAS COMPUTER ACCESS AREAS : Spring 1995

Day of Week	*Willis*	*BA*	*ISB 110*	*Chilton 116, 255*	*Art 231*	*GAB 330, Wooten*	*Matthews*	*Music*	*GAB 550, Terrill*	*ISB 205C*	*ISB I/OArea (138A)*	*Lab Locations*
Monday-Tuesday	Open 24 hrs.	8 am-MN	7:30 am-MN	8 am- 10 pm	9 am-11 pm	8 am-MN	8 am - 10 pm	8 am-MN	8 am-8 pm	10 am-8 pm	Open 24 hrs.	✪ **Art:**231 ✪ **BA:** 330, 332 ✪ **Chilton:** 255, 116 [Adaptive Lab] ✪ **GAB:** 330, 550 ✪ **ISB:** 110, 205C — graduate students only ✪ **Matthews:** 309 ✪ **Music:** 1007 ✪ **Terrill:** 220 ✪ **Willis:** 134 ✪ **Wooten:** 120
Wednesday-Thursday	Open 24 hrs.	8 am-MN	7:30 am-MN	8 am- 10 pm	9 am-11 pm	8 am-MN	8 am - 10 pm	8 am-MN	8 am-8 pm	Noon-10 pm	Open 24 hrs.	
Friday	Open 24 hrs.	8 am-8 pm	7:30 am-9 pm	8 am- 5 pm	9 am-11 pm	8 am-5 pm	8 am - 5 pm	8 am-5 pm	8 am-5 pm	Noon-5 pm	Open 24 hrs.	
Saturday	Open 24 hrs.	8 am-8 pm	9 am - 9 pm	8 am- 5 pm (116) 10 am-5 pm (255)	9 am-5 pm	**Wooten Closed. GAB** Noon-8 p.m.	10 am-5 pm	10 am - 5pm	**Closed**	**Closed**	Open 24 hrs.	
Sunday	Open 24 hrs.	Noon-MN	1- MN	1- 10 pm	Noon-10 pm	Noon-MN	1 - 10 pm	1 - MN	**Closed**	1-8 pm	Noon-MN	

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Laws continued from page 1.

It's a Privilege

The University defines access to computer resources as a privilege. The "Computer Resources Security Policy, " *University Policy Manual, Volume II Administrative and Fiscal* (August 23, 1991, page 3 of 7), states that:

> User's of university computer resources must not abuse or allow others to abuse their access to university computer resources.
>
> Access to the university computer resource of any computer installation must be approved by the management of that computer installation. All individuals authorized to use university computer resources are responsible for all usage of their logon access and should keep their passwords confidential to protect university computer resources.
>
> Users may not access University computer resources without appropriate authorization and then only for purposes for which their access is authorized.
>
> Any attempt to access or to assist in the access of university computer resources via an unauthorized means is a violation of this policy and may subject the perpetrator(s) to sanctions hereunder.

Furthermore, this same document (page 6 of 7) lists the following responsibilities of individual employees and/or students:

> a. All individuals, whether faculty, staff employees or students, may be required to sign a confidentiality agreement upon receiving the privilege of using university computer resources.
>
> b. All individuals must comply with university computer resource policies and standards.
>
> c. All individuals authorized to use university computer resources are responsible for all usage of their logon access and should keep their passwords confidential to protect university computer resources.
>
> d. All individuals who use wide-area network services (such as BITNET or the Internet) provided via university computer resources shall abide by the policies of those networks.
>
> e. All individuals shall not attempt to access university computer resources for which they have no authorization.

Sanctions

The following sanctions are in place, should one violate University computer resource policies ("Computer Resources Security Policy, " *University Policy Manual, Volume II Administrative and Fiscal*, August 23, 1991, page 6 of 7).

> 6.1 Penalties for violation of this policy range from loss of computer resource usage privileges to dismissial from the university, prosecution, and/or civil action. Each case will be determined separately on its merits. Referrals for legal action will .be made through the Office of the General Counsel.
>
> 6.2 If the offender is a faculty member, his or her supervisor (usually the department chair) shall initially recommend to the dean and thereafter to the Provost the appropriate sanction. When termination is recommended, the faculty member may appeal to the University Review Committee or to the University Tenure Committee, whichever is appropriate per the University of North Texas *Faculty Handbook*.
>
> 6.3 If the offender is a staff member, the procedures to be followed are those specified in the "Discipline and Discharge Policy" of the University of North Texas *Personnel Policy Manual*.
>
> 6.4 If the offender is a student, the procedures to be followed are those specified in the "Code of Student Conduct and Discipline" as printed in the University of North Texas Student Guidebook. If the student in violation of this policy is also an employee of the university, sanctions may include termination of employment.

Federal and State Computer Crime Laws

The laws listed on the following pages are currently being used to decide whether a computer crime has been committed either at the federal level or in the state of Texas. People can also be charged with criminal activity by violating various other Federal statutes with regard to copyright infringement, wire fraud, patent infringement and a host of other related laws (this is where things get messy).

Federal Law

UNITED STATES CODE SERVICE

THIS SECTION IS CURRENT THROUGH 102 P.L. 82, APPROVED 08/06/91 ***

TITLE 18 - CRIMES AND CRIMINAL PROCEDURE

PART I. CRIMES

CHAPTER 47. FRAUD AND FALSE STATEMENTS

18 USCS @ 1030 (1991)

@1030. Fraud related activity in connection with computers
(a) Whoever-

(1) knowingly accesses a computer without authorization or exceeds authorized access, and by means of such conduct obtains information that has been determined by the United

States Government pursuant to an Executive order or statute to require protection against unauthorized disclosure for reasons of national defense or foreign relations, or any restricted data, as defined in paragraph y[(y)][.] of section 11 of the Atomic Energy Act of 1954 [42 USCS @ 2014(y)], with the intent or reason to believe that such information so obtained is to be used to the injury of the United States, or to the advantage of any foreign nation;

(2) intentionally accesses a computer without authorization or exceeds authorized access, and thereby obtains information contained in a financial record of a financial institution, or of a card issuer as defined in section 1602(n) of title 15, or contained in a file of a consumer reporting agency on a consumer, as such terms are defined in the Fair Credit Reporting Act (15 U.S.C. 1681 et seq.);

(3) intentionally, without authorization to access any computer of a department or agency of the United States, accesses such a computer of that department or agency that is exclusively for the use of the Government of the United States or, in the case of a computer not exclusively for such use, is used by or for the Government of the United States and such conduct affects the use of the Government's operation of such computer;

(4) knowingly and with intent to defraud, accesses a Federal interest computer without authorization, or exceeds authorized access, and by means of such conduct furthers the intended fraud and obtains anything of value, unless the object of the fraud and the thing obtained consists only of the use of the computer;

(5) intentionally accesses a Federal interest computer without authorization, and by means of one or more instances of such conduct alters, damages, or destroys information in any such Federal interest computer, or prevents authorized use of any such computer or information, and thereby-

(A) causes loss to one or more others of a value aggregating $ 1,000 or more during any one year period; or

B) modifies or impairs, or potentially modifies or impairs, the medical examination, medical diagnosis, medical treatment, or medical care of one or more individuals; or

(6) knowingly and with intent to defraud traffics (as defined in section 1029) in any password or similar information through which a computer may be accessed without authorization, if-

(A) such trafficking affects interstate or foreign commerce; or

(B) such computer is used by or for the Government of the United States;

shall be punished as provided in subsection (c) of this section.

(b) Whoever attempts to commit an offense under subsection (a) of this section shall be punished as provided in subsection (c) of this section.

(c) The punishment for an offense under subsection (a) or (b) of this section is-

(1)(A) a fine under this title or imprisonment for not more than ten years, or both, in the case of an offense under subsection (a)(1)of this section which does not occur after a conviction for another offense under such subsection, or an attempt to commit an offense punishable under this subparagraph; and

(B) a fine under this title or imprisonment for not more than twenty years, or both, in the case of an offense under subsection (a)(1) of this section which occurs after a conviction for another offense under such subsection; or an attempt to commit an offense punishable under this subparagraph; and

(2)(A) a fine under this title or imprisonment for not more than one year, or both, in the case of an offense under subsection (a)(2), (a)(3) or (a)(6) of this section which does not occur after a conviction for another offense under such subsection, or an attempt to commit an offense punishable under this subparagraph; and

(B) a fine under this title or imprisonment for not more than ten years, or both, in the case of an offense under subsection (a)(2), (a)(3) or (a)(6) of this section which occurs after a conviction for another offense under such subsection, or an attempt to commit an offense punishable under this subparagraph;and

(3)(A) a fine under this title or imprisonment for not more than five years, or both, in the case of an offense under subsection (a)(4) or (a)(5) of this section which does not occur after a conviction for another offense under such subsection, or an attempt to commit an offense punishable under this subparagraph; and

(B) a fine under this title or imprisonment for not more than ten years, or both, in the case of an offense under subsection (a)(4) or (a)(5) of this section which occurs after a conviction for another offense under such subsection, or an attempt to commit an offense punishable under this subparagraph.

(d) The United States Secret Service shall, in addition to any other agency having such authority, have the authority to investigate offenses under this section. Such authority of the United States Secret Service shall be exercised in accordance with an agreement which shall be entered into by the Secretary of the Treasury and the Attorney General.

(e) As used in this section-

(1) the term " computer" means an electronic, magnetic, optical, electrochemical, or other high speed data processing device performing logical, arithmetic, or storage functions, and includes any data storage facility or communications facility directly related to or operating in conjunction with such device, but such term does not include an automated typewriter or typesetter, a portable hand held calculator, or other similar device;

(2) the term "Federal interest computer" means a computer -

(A) exclusively for the use of a financial institution or the United States Government, or, in the case of a computer not exclusively for such use, used by or for a financial institution or the United States Government and the conduct constituting the offense affects the use of the financial institution's operation or the Government's operation of such computer; or

(B) which is one of two or more computers used in committing the

offense, not all of which are located in the same State;

(3) the term "State" includes the District of Columbia, the Commonwealth of Puerto Rico, and any other commonwealth, possession or territory of the United States;

(4) the term "financial institution" means-

(A) an institution, with deposits insured by the Federal Deposit Insurance Corporation;

(B) the Federal Reserve or a member of the Federal Reserve including any Federal Reserve Bank;

(C) a credit union with accounts insured by the National Credit Union Administration;

(D) a member of the Federal home loan bank system and any home loan bank;

(E) any institution of the Farm Credit System under the Farm Credit Act of 1971;

(F) a broker-dealer registered with the Securities and Exchange Commission pursuant to section 15 of the Securities Exchange Act of 1934;

(G) the Securities Investor Protection Corporation;

(H) a branch or agency of a foreign bank (as such terms are defined in paragraphs (1) and (3) of section 1(b) of the International Banking Act of 1978 [12 USCS @ 3101(1), (3)]); and

(I) an organization operating under section 25 or section 25(a) of the Federal Reserve Act.

(5) the term "financial record" means information derived from any record held by a financial institution pertaining to a customer's relationship with the financial institution;

(6) the term "exceeds authorized access" means to access a computer with authorization and to use such access to obtain or alter information in the computer that the accesser is not entitled so to obtain or alter; and

(7) the term "department of the United States" means the legislative or judicial branch of the Government or one of the executive department enumerated in section 101 of title 5.

(f) This section does not prohibit any lawfully authorized investigative, protective, or intelligence activity of a law enforcement agency of the United States, a State, or a political subdivision of a State, or of an intelligence agency of the United States.

HISTORY: (Added Oct. 12, 1984, P.L. 98-473, Title II, Ch XXI, @ 2102(a), 98 Stat. 2190; Oct. 16, 1986, P.L. 99-474, @ 2, 100 Stat. 1213; Nov. 18, 1988, P.L. 100-690, Title VII, Subtitle B, @ 7065, 102 Stat. 4404; As amended Aug. 9, 1989, P.L. 101-73, Title IX, Subtitle F, @ 962(a)(5), 103 Stat. 502; Nov. 29, 1990, P.L. 101-647, Title XII, @ 1205(e), Title XXV, Subtitle I, @ 2597(j), Title XXXV, @ 3533, 104 Stat. 4831, 4910, 4925.)

The following amendment, passed on September 13, 1994 as part of the Violent Crime Control Act (PL103-322), changed portions of Title 18 USC sec 1030 text (cited on the previous two pages).

TITLE XXIX—COMPUTER CRIME

SEC. 290001. COMPUTER ABUSE AMENDMENTS ACT OF 1994.

(a) Short Title.—This subtitle may be cited as the ''Computer Abuse Amendments Act of 1994''.

(b) Prohibition.—Section 1030(a)(5) of title 18, United States Code, is amended to read as follows:

''(5)(A) through means of a computer used in interstate commerce or communications, knowingly causes the transmission of a program, information, code, or command to a computer or computer system if—

''(i) the person causing the transmission intends that such transmission will—

''(I) damage, or cause damage to, a computer, computer system, network, information, data, or program; or

''(II) withhold or deny, or cause the withholding or denial, of the use of a computer, computer services, system or network, information, data or program; and

''(ii) the transmission of the harmful component of the program, information, code, or command—

'(I) occurred without the authorization of the persons or entities who own or are responsible for the computer system receiving the program, information, code, or command; and

''(II)(aa) causes loss or damage to one or more other persons of value aggregating $1,000 or more during any 1-year period; or

''(bb) modifies or impairs, or potentially modifies or impairs, the medical examination, medical diagnosis, medical treatment, or medical care of one or more individuals; or

''(B) through means of a computer used in interstate commerce or communication, knowingly causes the transmission of a program, information, code, or command to a computer or computer system—

''(i) with reckless disregard of a substantial and unjustifiable risk that the transmission will—

''(I) damage, or cause damage to, a computer, computer system, network, information, data or program; or ''

(II) withhold or deny or cause the withholding or denial of the use of a computer, computer services, system, network, information, data or program; and

''(ii) if the transmission of the harmful component of the program, information, code, or command—

''(I) occurred without the authorization of the persons or entities who own or are responsible for the computer system receiving the program, information, code, or command; and

''(II)(aa) causes loss or damage to one or more other persons of a value aggregating $1,000 or more during any 1-year period; or

''(bb) modifies or impairs, or potentially modifies or impairs, the medical examination, medical diagnosis, medical treatment, or medical care of one or more individuals;''.

(c) Penalty.—Section 1030(c) of title 18, United States Code is amended—

(1) in paragraph (2)(B) by striking ''and'' after the semicolon;

(2) in paragraph (3)(A) by inserting ''(A)'' after ''(a)(5)'';

(3) in paragraph (3)(B) by striking the period at the end thereof and inserting ''; and''; and (4) by adding at the end the following new paragraph:

''(4) a fine under this title or imprisonment for not more than 1 year, or both, in the case of an offense under subsection (a)(5)(B).''.

(d) Civil Action.—Section 1030 of title 18, United States Code, is amended by adding at the end thereof the following new subsection:
''(g) Any person who suffers damage or loss by reason of a violation of the section, other than a violation of subsection (a)(5)(B), may maintain a civil action against the violator to obtain compensatory damages and injunctive relief or other equitable relief. Damages for violations of any subsection other than subsection (a)(5)(A)(ii)(II)(bb) or (a)(5)(B)(ii)(II)(bb) are limited to economic damages. No action may be brought under this subsection unless such action is begun within 2 years of the date of the act complained of or the date of the discovery of the damage.''.
(e) Reporting Requirements.—Section 1030 of title 18 United States Code, is amended by adding at the end the following new subsection:
''(h) The Attorney General and the Secretary of the Treasury shall report to the Congress annually, during the first 3 years following the date of the enactment of this subsection, concerning investigations and prosecutions under section 1030(a)(5) of title 18, United States Code.''.
(f) Prohibition.—Section 1030(a)(3) of title 18, United States Code, is amended by inserting ''adversely'' before ''affects the use of the Government's operation of such computer''.

State Law

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF TEXAS SECTION 1, Title 7,

Penal Code, is amended by adding Chapter 33 to read as follows:
CHAPTER 33. COMPUTER CRIMES
Section 33.01. DEFINITIONS

In this chapter:

(1) 'Communications common carrier' means a person who owns or operates a telephone system in this state that includes equipment or facilities for the conveyance, transmission, or reception of communications and who receives compensation from persons who use that system.

(2) 'Computer' means an electronic device that performs logical, arithmetic, or memory functions by the manipulations of electronic or magnetic impulses and includes all input, output, processing, storage, or communication facilities that are connected or related to the device. 'Computer' includes a network of two or more computers that are interconnected to function or communicate together.

(3) 'Computer program' means an ordered set of data representing coded instructions or statements that when executed by a computer cause the computer to process data or perform specific functions.

(4) 'Computer security system' means the design, procedures, or other measures that the person responsible for the operation and use of a computer employs to restrict the use of the computer to particular persons or uses or that the owner or licensee of data stored or maintained by a computer in which the owner or licensee is entitled to store or maintain the data employs to restrict access to the data.

(5) 'Data' means a representation of information, knowledge, facts, concepts, or instructions that is being prepared or has been prepared in a formalized manner and is intended to be stored or processed, is being stored or processed, or has been stored or processed, in a computer. Data may be embodied in any form, including but not limited to computer printouts, magnetic storage media, and punchcards, or may be stored internally in the memory of the computer.

(6) 'Electric utility' has the meaning assigned by Subsection (c), Section 3, Public Utility Regulatory Act (article 1446c, Vernon's Texas Civil Statutes).

Section 33.02.
BREACH OF COMPUTER SECURITY

(a) A person commits an offense if the person:

(1) uses a computer without the effective consent of the owner of the computer or a person authorized to license access to the computer and the actor knows that there exists a computer security system intended to prevent him from making that use of the computer; or

(2) gains access to data stored or maintained by a computer without the effective consent of the owner or licensee of the data and the actor knows that there exists a computer security system intended to prevent him from gaining access to that data.

(b) A person commits an offense if the person intentionally or knowingly gives a password, identifying code, personal identification number, or other confidential information about a computer security system to another person without the effective consent of the person employing the computer security system to restrict the use of a computer or to restrict access to data stored or maintained by a computer.

(c) An offense under this section is a Class A misdemeanor.

Section 33.03. HARMFUL ACCESS

(a) A person commits an offense if the person intentionally or knowingly:

(1) causes a computer to malfunction or interrupts the operation of a computer without the effective consent of the owner of the computer or a person authorized to license access to the computer; or

(2) alters, damages, or destroys data or a computer program stored, maintained, or produced by a computer, without the effective consent of the owner or licensee of the data or computer program.

(b) An offense under this section is:

(1) a Class B misdemeanor if the conduct did not cause any loss or damage or if the value of the loss or damage caused by the conduct is less than $200;

(2) a Class A misdemeanor if the value of the loss or damage caused by the conduct is $200 or more but less than $2,500; or

(3) a felony of the third degree if the value of the loss or damage caused by the conduct is $2,500 or more.

Section 33.04. DEFENSES.

It is an affirmative defense to prosecution under Sections 33.02 and 33.02 of this code that the actor was an officer, employee, or agent of a communications common carrier or electric utility and committed the proscribed act or acts in the course of employment while engaged in an activity that is a necessary incident to the rendition of service or to the protection of the rights or property of

the communications common carrier or electric utility.

Section 33.05
ASSISTANCE BY ATTORNEY GENERAL.

The attorney general, if requested to do so by a prosecuting attorney, may assist the prosecuting attorney in the investigation or prosecution of an offense under this chapter or of any other offense involving the use of a computer.

SECTION 2. This Act takes effect September 1, 1985.

SECTION 3. The importance if this legislation and the crowded condition of the calendars in both houses create an emergency and an imperative public necessity that the constitutional rule requiring bills to be read on three separate days in each house be suspended, and this rule is hereby suspended. ■

PC Software Industry Lost $8.08 Billion To Pirates In 1994

This article is an edited part of a February 24, 1995 press release by The Software Publishers Association. The Software Publishers Association is the principal trade association of the PC software industry. Its 1,150 members represent the leading publishers in the business, consumer, and education markets. The SPA has offices in Washington,DC, and Paris, France. SPA press releases are available on-line through CompuServe (GO:SPAFORUM), and from SPA's faxback service at 800 637-6823. Contact (202) 452-1600: David Tremblay, Research Director, ext. 317, Ken Wasch, Executive Director, ext. 310, Sally Lawrence, Communications Director, ext. 320

The Software Publishers Association (SPA) released its latest global statistics on software piracy on February 24, 1995 to coincide with Vice President Gore's remarks before the G-7 "Information Society" Conference. The three-day meeting, broadly

Please see **SPA** on page 8.

Software Piracy

This is a heavily edited version of an article that appeared in the University of British Columbia University Computing Services' newsletter ***Campus Computing*** *(January 1992, Vol. 7, No. 1). The original authors are Wendy Alexander (wendy_alexznder@mtsa.ubc.ca), Teresa Tenisci (teresa_tenisci@mtsa.ubc.ca) University Computing Services, the University of British Columbia. A previous version of this article appeared in the February 1992 issue of* **Benchmarks** *(Vol. 13, No. 2).*

The University of Oregon Continuation Center settled a copyright lawsuit with the Software Publishers Association to pay $130,000 as well as organize and host a national conference on copyright law and software use. This was the first software copyright suit brought against a higher education institution. The federal suit was filed against the school in February 1990 on behalf of several software vendors, including Lotus Development Corp., Microsoft Corp. and WordPerfect Corp. The suit alleged that the center employees made unauthorized copies of the software companies' program and training manuals.

— *Ledger*, Association of College and University Auditors, Nov. 1991

When we speak of pirates in today's world, two different visions come to mind. The first is of a latter-day swashbuckling ruffian who captured cargo ships and stole the riches and wealth aboard for himself. The second is of a person who copies software from a source to their own PC, without purchasing it from a legal vendor. We may see both as underdogs, fighting the injustice of "the system," while remaining worthy at heart, and therefore somehow admirable. No wonder software piracy is not viewed as a crime by most people.

In fact, software piracy is a crime. It is theft.

When a software package is purchased from a legal vendor, a contract exists between the vendor and the purchaser. This contract, called a license, can be found in various places: in the instruction manuals, other documentation, or on the disk itself. Most people believe that once they have purchased software, they own it. This is not quite true. In fact, what has been purchased is the license which allows the purchaser to use the product. The software company still owns the software. This lack of understanding often leads to breaches of the contract through software piracy, and in many cases the culprits are not even aware of the illegalities of their actions. Sometimes, just breaking the seal of a disk package constitutes a legal and binding acceptance of the license's conditions.

Don't make UNT the target of the next search warrant. The embarrassment that would be caused by a lawsuit would be damaging to the reputation of the University, and the fines can be very expensive. Don't be fooled into thinking that only the University will be liable and have to pay. Depending on policies in place within your department, you too, might be liable.

Some Common Scenarios

What follows are some common situations that will test your knowledge of what is legal and what is not when it comes to software duplication.

- **Situation #1:** A software program has been purchased by an office for one of its employees. Other employees in the same office hear of the program and discover that it would be a great help to them in their work. Can legal copies be made?

  Answer: No, legal copies cannot be made. Many people make this mistake, believing that as long as the program is for company business, the use of it within the workplace is legal. Most license agreements require that each machine or workstation that uses the program must have a *purchased* copy of that program.

- **Situation #2:** A computer which "belonged" to the employee you are replacing is now yours. All sorts of wonderful programs are on it and you assume they are legal copies. If you are audited and are found to have illegal software on your machine, are you responsible?

  Answer: You may be responsible, depending on policies within your department. Just because somebody else put the software on the machine doesn't mean you are blameless. Essentially, you turned a blind eye and benefited from the existence of the software on the machine. Ways to determine whether or not your software is legal are: check to see if official documentation exists for your machine; check to see if there are any official diskettes for the program; check for official templates on your computer keyboard. If none of these three exists, be prepared to find out that the software is illegal. You may want to speak with the person in your department who keeps track of purchasing software for more information on the programs installed on your machine.

- **Situation #3:** The office operates on a network. Since one person has a legal copy of a software program, and has installed it on the network, everyone is allowed to use it. True or False?

  Answer: Either answer may be correct, depending on what the software license says. Some licenses are strict and insist that every person who uses a program, whether it be on a network or not, must purchase the program. Some software companies sell site licenses, and these allow everyone on the network to use the program without purchasing copies for each individual who will use it.

- **Situation #4:** An update for your spreadsheet program arrives. Your co-worker has been asking you for a copy of the program, but you know that it is illegal so you refused. But now that the new version has arrived, and you have no need for the old version, can you give it to your co-worker?

  Answer: No. Updates are defined as enhancements to the original package that you purchased. Once the package has been updated, the old package should be destroyed or used solely as a backup.

- **Situation #5:** You have a big presentation to give tomorrow and, as five o'clock rolls around, you realize that you have to be home to baby-sit your children. Once the kids are settled in bed, can you use the software from the office on your home machine?

  Answer: Maybe. Again, it depends on what the software license says. Some licenses say that software can be used both at home and at the office. Some say that the program can be used on several machines, provided that no two are running at the same time. Some programs are very restrictive, and say that the program can only be used on one machine. If you don't have access to the license, or if you find it ambiguous or unclear, make sure you check with someone such as a technical support person, about the details before you copy anything.

What to Do?

If you find yourself in a quandry over software usage, someone should be able to help you. As a first step, contact Support Services in the Computing Center [ISB 119, (817) 565-2324, helpdesk@unt.edu], and see if someone there can answer your question.

The Software Publishers Association (SPA) operates a toll-free hotline through which you can access information about how to order an anti-piracy video, or a self-audit kit, or just get some anti-piracy information. The number is: 1-800-388-7478. They also have a brand new WWW site at http://www.spa.org

Another organization, the Business Software Alliance (BSA), also has a toll-free hotline: 1-800-688-BSA1 (2721). FAX: (202)737-7063.

Please consult the article on page 10 about site licensed products here at UNT. ■

SPA continued from page 7.

addressed issues surrounding the development of the Global Information Infrastructure (GII). The SPA report details high double-digit piracy rates in countries from all regions of the world. The report serves to underscore the threat large scale intellectual property theft poses to the development of the GII. Intellectual property rights are becoming increasingly critical in international trade negotiations as well, as evidenced in the recent stance taken by the USTR on intellectual property violations in China.

The SPA statistics contained herein summarize 1994 global software piracy activity. In 1994, the personal computer software industry lost $8.08 billion due to illegal copying of business application software alone. The SPA estimates that just under half (49%) of the business software in use in 1994 was pirated. The estimates do not include illegal copying of operat-

ing systems, education, entertainment, or personal productivity software.

> "The good news is that we see a decline of $1.9 billion in revenue losses from theft of business software from 1993," said Ken Wasch, Executive Director of the SPA. "The bad news is that drop is due entirely to declining prices of business software in country after country. Therefore, as sales volumes have increased and prices have declined, the volume of pirated units have nearly commensurably risen. Overall, the number of units pirated actually increased 14% in 1994. These figures clearly show that while some countries have shown improvement there is still a major problem in international markets."

China, Russia and Thailand Rates Exceed 90%

Of the countries for which the SPA is able to estimate piracy losses, China has the highest piracy rate at 98%. Russia at 95% and Thailand at 92% are close behind. All three countries' poor records of protecting software copyrights led the SPA to cite them in its 1994 Section 301 filing with the US Trade Representative. Software industry losses to piracy in these three countries in 1994 were $187 million in China, $144 million in Russia and $55 million in Thailand.

> "China, Russia, and Thailand deserve credit for enacting copyright laws that specifically protect computer programs and other software," said Wasch. "But the astronomic levels of software piracy in these countries illustrate what the SPA has learned in the US and abroad — that the law is just the first step toward legal software use. Another crucial step is education — teaching software users why they should not make illegal copies. We invite the governments and software users in China, Russia, and Thailand to work with us in sending that message."

Japan and US Have Highest Piracy Revenue Losses in the World

Piracy losses to software publishers in Japan were $1.31 billion in 1994, higher than those seen in any country of the world. While the loss in Japan was down from $1.66 billion in 1993, this decline was largely due to price declines. The number of units of software pirated fell only 6% in Japan between 1993 and 1994.

Piracy losses in the US fell from $2.08 billion in 1993 to $1.05 billion in 1994 - a nearly 50% decline. In spite of having one of the lowest piracy rates in the world, losses in the US are among the highest, however, because of the sheer size of the US personal computer hardware and software markets.

Western Europe Follows Trend

Piracy losses in Western Europe declined sharply in 1994, falling to $1.65 billion from $3.65 billion in 1993. Once again, however, much of the drop was due to the decline in software prices from 1993 to 1994. The rate of software piracy remained at a fairly high 45% in Western Europe in 1994. Piracy losses in France amounted to $482 million in 1994, and were the highest of all countries in Western Europe. While most other Western European countries saw 10-20%+ declines in their piracy rates between 1993 and 1994, France's decline from 66% to 62% can only be called disappointing.

Results in other countries varied widely. Some countries, notably Switzerland and Finland, had among the lowest piracy rates in the world in 1994, while others, such as Spain and Portugal, had piracy rates above 70%. Of all the countries in Western Europe, the results in Italy in 1994 were the most distressing. Strong anti-piracy actions by the Italian government in early 1993 led to a much reduced piracy rate for all of 1993, and created great expectations for 1994. Unfortunately, these actions did not carry through into 1994. As a result, piracy in Italy was *up* in 1994, with the rate increasing from 66% to 68%. Although dollar losses in Italy fell from $283 million in 1993 to $264 million in 1994, the decline again was entirely due to price declines. The number of applications pirated in Italy rose 4% between 1993 and 1994.

Asian/Pacific Rim Markets Remain Piracy Problems

Of the eleven Asia/Pacific Rim markets for which SPA is able to develop piracy estimates, only two (Australia and New Zealand) had piracy rates below 50% in 1994. The software industry lost $2.03 billion to pirates in this region in 1994, as the overall piracy rate was 62%. While this was a 25% decline from the $2.72 billion loss (75% rate) of 1993, the decline was again due to the fall of application prices. The number of applications pirated increased by 1%.

Even in a region with many problem markets, China still stands out. Ninety-eight percent of the business applications software in use in China in 1994 was pirated.

> "The Chinese government's unwillingness to take necessary actions to protect intellectual property has prompted the US government to cite China under Section 301 trade sanctions," said Mark Traphagen, Counsel for the SPA. "We fully support the administration's firm stance against China and hope that it will force the authorities in China to take steps to remedy their well-documented piracy and counterfeit problem."

SPA Adds Home-Use Business Software to Analysis

SPA estimates are based on hardware sales figures from International Data Corporation, and on SPA and other industry software sales data.

> "The SPA estimates now consider business applications used on home-based personal computers," said SPA Research Director David Tremblay. "In previous years, our piracy analysis did not consider the purchase and use of software on home computers. We could no longer ignore this use. In many markets, home computers accounted for 30 to 40% of personal computer sales. The addition of these PCs into the analysis is why our 1993 piracy estimates were recently revised upward from $7.45 billion to the current $9.96 billion estimate."■

Copyrights in Cyberspace

By Steve Elias Copyright (c) 1994 Nolo Press, reprinted with permission.

This article originally appeared in the Summer 1994 issue of the **Nolo News**.

While browsing on an electronic bulletin board, you come across an interesting article on dog training. Thinking it might be of interest to the members of your dog owners' club, you download it, print it out and reprint it in the next issue of your club's newsletter.

Congratulations — you've probably just violated federal law.

Don't worry, you won't be hauled off to the federal pen. The law you ran afoul of is copyright law, which gives

Please see **Copy** on page 13.

Software Site Licenses at UNT

By Chris Strauss, Support Services Coordinator (strauss@unt.edu)

The University of North Texas Computing Center makes a wide variety of computer software available to the Denton campus through its networks, host computers, and software site licenses. This article will focus on the software we provide under our various license programs for faculty, staff, and student use on UNT microcomputers.

While some of these programs are centrally funded and available to campus users at no cost, most are charged back to the departments at nominal prices. The primary benefit of these programs to the University is in the cost savings they achieve. Each licensing program provides current commercial software at bulk educational prices significantly lower than the retail prices for individual packages.

The Computing Center manages these licensing programs centrally, but software installation is done at the distributed support level. Briefly, the process works something like this:

> We receive the software on CD-ROM or diskette directly from the vendor, and load it to our software distribution server. That server is divided into functional and vendor specific areas, each managed by the appropriate support person in the Computing Center.
>
> As new products become available or upgraded versions arrive, this group sends electronic mail notifications to all distributed software managers. Each network manager, General Access Lab manager, or departmental software manager (often the same person), is then responsible for installing or upgrading the software on their network server for general use.
>
> Distributed support personnel are also responsible for making any diskettes to install stand-alone machines, or for making local installations on networked machines. The procedures for obtaining software in each college, department, or administrative office vary widely; ask your network manager for details.

Available Products

The products available range from highly specialized statistical analysis tools to general purpose commercial word processing software. I will focus on the products intended for microcomputer usage, running under the DOS, Macintosh, OS/2, and Windows environments.

❑ **SAS and SPSS:**

UNT provides two high-powered statistical analysis tools, SAS and SPSS, from central funding. The licensing schemes are different, and there are some restrictions on who may obtain copies of which products.

- **SAS for DOS** is available to all faculty, staff, and students who have a need for it.
- **SAS for OS/2 and for Windows** is available to faculty and staff, and only to students who are currently enrolled in associated course work. Distribution to students is normally through the instructor, not the Computing Center.
- **SPSS** is available to faculty and staff only, on the following platforms: DOS, Macintosh, and Windows. We cannot distribute SPSS to students, as

SPSS Inc. markets a low-priced collegiate package through the University bookstore.

Under both of these licensing agreements, UNT provided copies of SAS and SPSS may be used on privately owned microcomputers.

SAS and SPSS are available to both Denton campus and Health Science Center users. The point of contact for statistical tool and research consulting is Panu Sittiwong at 565-2140.

❑ **WordPerfect Products**:

WordPerfect products have been available to UNT faculty and staff offices through educational licensing for a number of years. They are also available to students for use in labs.

Initially this was through an 8-for-1 educational pricing scheme, with licenses and disks sold directly by the Computing Center. During fiscal year 1994 we operated a centrally funded WordPerfect Customer Advantage Program, using a central distribution server and decentralized installation by software managers.

This program shifted back to reimbursable funding in fiscal 1995. Software managers install licenses on their servers and stand-alone machines, report quarterly numbers, and reimburse the Computing Center for each new or upgrade license. Products currently available under this program are WordPerfect for DOS, Macintosh, and Windows; Presentations for DOS and Windows; and Works for DOS and Macintosh.

The newest releases are WordPerfect 3.1 for Macintosh, WordPerfect 6.1 for Windows, and Presentations 3.0 for Windows. The new Windows versions sport a tremendous number of new features and completely re-designed interfaces.

Training on WordPerfect products is available through Academic Computing Short Courses (see page 23) and UNT Human Resources Computer Classes. The point of contact for WordPerfect products is Sandy Burke at 565-3856.

❑ **Macintosh System 7.5:**

The Computing Center has a direct licensing agreement with Apple Computer, Inc. for System 7.5, the latest version of the Macintosh operating system. Our license allows us to upgrade any UNT-owned (Denton campus) Macintosh to System 7.5. This agreement is centrally funded. The point of contact for Apple products is Sean McMains at 565-2039.

❑ **Software through DIR:**

Beginning last Fall, the Computing Center arranged to provide additional lines of software through the State of Texas Department of Information Resources (DIR). At this time we are providing Claris, IBM, and Microsoft applications products under this arrangement. They are available for use on UNT microcomputers by faculty and staff, and to students through the General Access Labs.

We obtain licenses for these products under contracts negotiated by DIR for all State educational organizations, again at very advantageous pricing. The first of these is for Claris products, primarily for Macintosh.

- **ClarisWorks:** We currently make available ClarisWorks 3.0 for Macintosh and Windows, and ClarisDraw 1.0 for Macintosh. Our Macintosh users rate ClarisWorks as the best "works" product by far of all those we have available

  The point of contact for Claris products is Sean McMains at 565-2039. Sean is also a point of contact for any of the Macintosh products from WordPerfect or Microsoft.

- **OS/2:** The only products of note that we obtain through DIR's IBM contract are the various flavors of OS/2. Since we do not currently support OS/2 as a desktop environment, but more as a server OS, distribution is limited primarily to technical support staff.

  The dissemination of software is normally handled at the distributed support level since it must be locally installed from CD-ROM or diskette. Since OS/2 cannot be installed over the network, it is not mounted on our distribution server. Essentially, the Computing Center provides the vehicle for inexpensive licensing of additional copies for departments who have already obtained diskettes or CD-ROM copies of OS/2.

  The point of contact for OS/2 is Mark Adamson at 565-4313.

- **Microsoft Products:** Under the DIR contract with Microsoft, virtually every product that Microsoft makes is available to campus users. The greatest interest has been in applications and development tools. The most interesting feature of the new office suite of applications is that they are now virtually identical across the Windows and Macintosh platforms.

  The standard office applications, **Word, Excel, and PowerPoint**, share the same user interfaces and exchange files without translation.

  For database software, the "xBase" compatible **FoxPro** is available on both platforms, but the best-seller by far for database work is Access for Windows.

  In development tools, **Visual Basic and Visual C++** are available in a number of configurations for DOS, Windows, and Windows NT.

  For those needing a quick and dirty Windows desktop publishing program (and don't need the indexing and long-

document capabilities of PageMaker, Ventura, or Quark), MS Publisher is available.

Most of the Microsoft products are loaded on the software distribution server, and are available through distributed support personnel. With the exceptions noted below, all Microsoft software is reimbursed to the Computing Center with the quarterly reports by software managers.

- **UNT and Microsoft:** In addition to the DIR contract with Microsoft, we have our own direct agreement with Microsoft under their Select program for operating systems. This provides us with licensing for MS-DOS, Windows, Windows for Workgroups, and Windows NT at prices generally below those of the DIR contract.

  Some DOS upgrades (from versions prior to 5.0) and most MS-Windows installations are currently funded centrally by the Computing Center. Software managers have the details. The other Windows products are available but must be reimbursed in the same manner as all other Microsoft products.

  Training on MS-DOS and Windows is available through Academic Computing Short Courses and UNT Human Resources Computer Classes. The point of contact for Operating Systems is Mark Adamson at 565-4313.

- **Specialized Site Licenses:** Several small, specialized site licenses are also available on campus. The most well publicized is F-PROT Professional, our primary defense against IBM-PC viruses.

  - **F-PROT:** We centrally fund this license from a commercial source for all UNT Denton campus associated persons, for both UNT and student-owned machines. It is available for download to diskette by faculty, staff, and students at the Computing Center helpdesk, and in the General Access Labs. It is also mounted on the software distribution server, along with the NetWare server version NET-PROT, for software managers to install on faculty and staff systems. This is a commercial variant of the program, and is different from the freeware version of F-PROT available on our FTP server and elsewhere on the Internet.

    The freeware version is for individual use only, and is NOT authorized for use on UNT computers. The point of contact for F-PROT is Eriq Neale at 565-4808.

  - **ProCommPlus:** Another well-know product is ProComm Plus for DOS, version 1.1b, a solid but dated communications program. UNT purchased a site license for this product years ago that enables us to give copies to any UNT affiliated person (valid UNT ID card holder), free of charge. Attempts to move to newer DOS or Windows versions have been stopped by prohibitive pricing by the vendor. ProComm is available for download in the Computing Center helpdesk. A UNT ID and signature are required.

  - **eXceed:** A recent addition to Computing Center managed software is Hummingbird eXceed, an X-Window server for MS-Windows. This product provides X-Windows terminal emulation on a machine running Microsoft Window. A fairly robust hardware platform is required. To date, it has only been used by the Institute for Applied Sciences. The Computing Center has just taken over the site license management in anticipation of increased on-campus demand for a PC-based X-Window server. Installation is fairly complicated, and a new license number must be purchased before the product can be installed.

    The point of contact for eXceed will be Dianna Laakso or Chris Strauss at 565-2324.

  - **Trumpet Windows Socket:** Even less well publicized is our license for an essential element of Internet access via Microsoft Windows. This is the Trumpet Windows Socket for TCP/IP connectivity. We have a license for all UNT associated machines. The software is loaded on the software distribution server for software managers to distribute.

    The point of contact for Trumpet Windows Socket is Doug Bateman at 565-2568.

  - **Zoom-Text Plus:** Another little-known license is ZoomText Plus, a DOS product that magnifies screen characters. The user may zoom in by line, window, or full screen. Magnification is from 2X to 16X. The software is especially useful for individuals with certain visual impairments. ZoomText is a Terminate-and-Stay-Resident program. ZTWin, a program included with ZoomText, is compatible with Windows. It is available through software managers, from the software distribution server, at no cost.

    The site license stipulates that the software may be used on any computer at UNT that is OWNED by UNT. The purchase of UNT's site license was made possible by financial donations from the following UNT departments: School of Community Service Adaptive Lab, Center for Rehabilitation Studies, Office of Disability Accommodation, Equal Opportunity Office, Computing Center, Academic Computing Services General Access Lab, College of Business Administration General Access Lab, College of Education General Access Lab. ■

Copy continued from page 10.

authors, composers and others who create works of expression certain rights over their creations.

You would probably think about copyright rules if you wanted to republish a chapter of a book, a play or a song you liked. But they're easy to overlook when you're dealing with electronic media. These bits of information fly around so rapidly and can be reproduced so easily that it's hard to remember that someone out there probably owns the right to determine when and how copies are made and used.

All works of expression have at least one thing in common: they are protected by copyright as soon as they are created and fixed in a tangible medium. For the most part, once an expression is entered into a computer in a form that can be read on screen or routed to a printer, it is considered fixed in a tangible medium, even if it is never printed out or saved to a disk. A copyright notice — that little (C) followed by the year and the author's name — is not required, but is recommended to remind people that the author claims a copyright.

The author of the expression owns the copyright, unless there has been a formal written transfer of that ownership or the expression is created as a work for hire or paid for by an employer. So a person who enters an expression into a computer for other people to see usually owns the copyright on that expression.

What does owning a copyright on an expression mean? Simply, that no one else can copy, distribute, display or adapt that expression without the copyright owner's consent. This consent may be given for free, for a fee or on the condition that an appropriate attribution be given. It is always a good idea, if you send material into cyberspace, to explicitly state the conditions for its use and reproduction. As a starting point, therefore, you can assume that you control the right to use any expressions that you author and put online. The important corollary is that any expressions you find online are probably controlled by someone else. and shouldn't be used without permission.

How Copyright Works

Copyright protects expression, not ideas or facts. For instance, information in a telephone book or a weather summary can be freely used. On the other hand, the expression used in an essay on telephones or a creative explanation of weather systems is protected by copyright even though the underlying data and ideas aren't.

Copyright law doesn't mean that you can never quote something interesting that you find online. The "fair use" rule allows you to use a small portion of an expression to comment on it or for an educational purpose. But if you want to use the expression for commercial gain, the fair use exception probably won't apply unless the portion you use is extremely small in relation to the entire expression.

It's extremely difficult to apply the fair use rule to new forms of expression such as the discussions that take place in "cyberspace" — for example, on Internet "newsgroups" or the conferences on online services such as America Online and CompuServe. A hundred people may each contribute a few lines to a discussion. If you want to use a big chunk of the conversation, must you get every contributor's permission? Theoretically, yes, because each contributor owns copyright in his or her words. However, since none of the contributions has any significant commercial value by itself, it's hard to see where the copyright owners would be harmed if the entire conversation were used without their individual permissions. Nevertheless, people whose words are used without their permission may be angry about it. It is always better to ask.

One last thing. Copyright is not the only law to be concerned about when launching words onto the information highway. You should also avoid invading a person's privacy or falsely accusing someone of committing an immoral or illegal act. ■

WordPerfect Site License is Changing

By Bill Buntain, Director of Network & Microcomputer Services (buntain@unt.edu)

WordPerfect Corp. was recently purchased by Novell, a networking company. Novell has been restructuring the licensing agreements for all WordPerfect products, which is likely to be very beneficial for UNT.

Novell's new program is a site license based on the combined population of faculty, staff, and students. As a site license, there is no installation tracking requirement, which should result in significantly reduced administrative costs both in the colleges and the departments and in the Computing Center.

The basic program provides unlimited on-campus use by faculty, staff, and students and the right for faculty and staff to have WordPerfect applications (WordPerfect, Presentations, GroupWise Remote, QuatroPro, etc.) installed on their home computers while they are working for the University. We are currently evaluating this program against other licensing programs we are participating in.

An optional extension to the program allows students to install the applications software on their home computers while they are associated with the University. We will not buy into this portion of the program until we have identified funding and determined a distribution mechanism for the software. We will update you on developments with this program as they occur. ■

The Rules of the Internet

By Dr. Philip Baczewski, Assistant Director of Academic Computing (baczewski@unt.edu)

This is an edited version of a "Network Connection" article that appeared in the June 1992 issue of Benchmarks (Vol. 13, No. 5, pg. 12).

Many of us have come to rely on Wide Area Networks to support various aspects of our scholarship. The use of BITNET and NSFNET, i.e. the Internet, are now taken for granted by many at colleges and universities. Periodically, however, it is helpful to review the usage guidelines of these networks so that these resources that we take so for granted are not intentionally or unintentionally subjected to abuses of the privilege of access. At UNT it is also University policy that those accessing Wide Area Networks shall abide by the policies of those networks.[1] It is very important, then, that if you use the Internet, you read and maintain a handy copy of their policies.

We last published the CREN usage guidelines in the June 1992 issue of *Benchmarks*. They are repeated below to familiarize you with them or refresh your memory of them. Also included below are the NSFNET usage guidelines. Although UNT is no longer a member of CREN, we still access BITNET sites on the Internet. Similarly, although NSFNET may be officially "dead" (see article on page 15), it's guidelines are still considered to be good "rules of the road" for the Information Superhighway.

Corporation for Research and Educational Networking Acceptable Use Policy[2]

CREN networks are for the use of persons legitimately affiliated with CREN Member or Affiliate organizations, to facilitate the exchange of information consistent with the academic, educational and research purposes of its members. All individuals affiliated with CREN Member or Affiliate organizations are responsible for seeing that their communities are aware of these guidelines, and that the guidelines are followed, both in letter and in spirit.

CREN networks are, at the discretion of the institutions involved, open to use by students enrolled at participating CREN Member or Affiliate educational institutions.

Use of CREN networks shall:

- Be consistent with the purposes and goals of the networks.
- Avoid interfering with the work of other users of the networks.
- Avoid disrupting the network host systems (nodes).
- Avoid disrupting network services.

[1] *University Of North Texas Policy Manual*, Classification 3.6, Section 4.8.d.

[2] The following is available from LISTSERV@BITNIC as the file CREN NET_USE. This file is maintained by the CREN Information Center and was last updated October 3, 1990. For more information contact the Corporation for Research and Educational Networking, Suite 600, 1112 Sixteenth Street, NW, Washington, DC 20036 Phone: (202) 872-4200.

Acceptable Use of the Networks

The following examples may help users of the networks apply these principles in particular cases.

- Messages that are likely to result in the loss of recipients' work or systems are prohibited.
- CREN networks are not to be used for commercial purposes, such as marketing, reselling bandwidth, or business transactions between commercial organizations.
- Advertising is forbidden. Discussion of a product's relative advantages and disadvantages by users of the product is encouraged. Vendors may respond to questions about their products as long as the responses are not in the nature of advertising.
- CREN networks may be used for the provision of services which support the needs and purposes of the CREN networks, and for which a charge is made, if the network is an optional mechanism for provision of this service for which no additional charge is made, and as long as the use of the service is consistent with the bandwidth of the network and the forwarding hosts. Providers of such information may be non-profit or for-profit organizations.
- Any communication which violates applicable laws and regulations is not allowed.**

** In particular, messages and data sent to destinations outside the U.S. must satisfy the Department of Commerce regulations (either be within the GTDA guidelines for information which may be generally transmitted or have the required license).

Users of CREN networks are expected to be responsible in their use:

- "Chain letters," "broadcasting" messages to lists or individuals,and other types of use which would cause congestion of the networks or otherwise interfere with the work of others are not allowed.
- BITNET files will be limited to sizes determined and reviewed periodically. (Note: The current limit is 300,000 bytes per file transmitted.)

CREN Members or Affiliates are expected to take reasonable measures (given the constraints of technology and management) to ensure that traffic using gateways between CREN networks and other networks conforms to these guidelines.

Final authority for CREN acceptable use policies lies with the CREN Board. It is the responsibility of member representatives to contact the CREN Board, in writing, regarding questions of interpretation. Until such issues are resolved, questionable use should be considered "not acceptable."

The NSFNET Backbone Services Acceptable Use Policy[3]

GENERAL PRINCIPLE:

(1) NSFNET Backbone services are provided to support open research and education in and among U.S. research and instructional institutions, plus research arms of for-profit firms when engaged in open scholarly communication and research. Use for other purposes is not acceptable.

SPECIFICALLY ACCEPTABLE USES:

(2) Communication with foreign researchers and educators in connection with research or instruction, as long as any network that the foreignuser employs for such communication provides reciprocal access to U.S. researchers and educators.

(3) Communication and exchange for professional development, to maintain currency, or to debate issues in a field or subfield of knowledge.

(4) Use for disciplinary-society, university-association, government-advisory, or standards activities related to the user's research and instructional activities.

(5) Use in applying for or administering grants or contracts for research or instruction, but not for other fundraising or public relations activities.

(6) Any other administrative communications or activities in direct support of research and instruction.

(7) Announcements of new products or services for use in research or instruction, but no advertising of any kind.

(8) Any traffic originating from a network of another member agency of the Federal Networking Council if the traffic meets the acceptable use policy of that agency.

(9) Communication incidental to otherwise acceptable use, except for illegal or specifically unacceptable use.

UNACCEPTABLE USES:

(10) Use for for-profit activities (consulting for pay, sales or administration of campus stores, sale of tickets to sports events, and so on) or use by for-profit institutions unless covered by the General Principle or as a specifically acceptable use.

(11) Extensive use for private or personal business.

This statement applies to use of the NSFNET Backbone only. NSF expects that connecting networks will formulate their own use policies. The NSF Division of Networking and Communications Research and Infrastructure will resolve any questions about this policy or its interpretation.■

[3] This NSFNET Acceptable Use Policy is also available via anonymous ftp to nis.nsf.net. Retrieve the file nsfnet.txt in the directory acceptable.use policies.

The End of the Original Internet

By Claudia Lynch, *Benchmarks* Editor (lynch@unt.edu)

The last components of the original NSFNet backbone will be shut down on April 30, 1995. This was the original "Internet." Interestingly, ANS, one of the NSFNet service providers, has been purchased by America Online.

A the note from Elise Gerich of Merit Computer Services, officially notifying the sites on the backbone of the impending cessation of service states:

> It is a sad note that at midnight in each respective time zone, the service that Merit, ANS, IBM, and MCI have collaborated to provide over the last seven years will cease to exist. It is also with pleasure that we complete this grand experiment on such a successful note. I think that this partnership has succeeded beyond any of our dreams. It has been fun! ■

News From the CWIS/Gopher Hole

By Doug Bateman, CWIS Coordinator
(dbateman@unt.edu)

This column covers features and resources available through the University's Gopher Campus Wide Information System (CWIS). Gopher is available on various UNT host computers including the VAX, Sol, and Jove. It is also available in the General Access Labs and on various Novell file servers around campus.

Law Stuff

In view of the theme of this issue, Computing and the Law, I could not resist sharing the image above with you since it fairly accurately reflects my personal opinion of the judicial goings-on of the past several months. And now with that out of the way, it's on to more serious stuff.

As it so happened, the theme of this issue of *Benchmarks* coincides with articles in two of the dozen or so magazines I subscribe to. For anyone with a serious interest in the Internet, I can heartily recommend both of these publications, although I would caution you to browse through an issue or two before you decide to subscribe. Each will no doubt appeal to those with *very* different mindsets.

First, there is *Internet World*, published monthly by Mecklermedia Corp. It is very readable and is loaded with pointers to Internet sites. Each issue features tutorials, how-to articles, columns geared to every level of 'Net Surfer, and several articles centered on a monthly theme. This month (March 1995) the theme is Multimedia on the Net with articles discussing VR (virtual reality), video conferencing, etc. Highly recommended reading and readily available... even UNT's bookstore carries it!

The second one is a little... no, it's a *lot* off the wall. *Wired* magazine is a reading experience you will either love or hate, and even that will vary from issue to issue (and page to page come to think of it). The graphic design will either dazzle you or leave you stunned. Still, it provides a serious perspective on the cyberpunk culture as well as addressing the "serious" side of the Internet. Also highly recommended, but with a caveat...don't blame me if you can't stand it.

As I promised you in the last issue, I will be providing you with pointers to various Internet sites, primarily in keeping with the "legal" theme of this Benchmarks. However, never let it be said that I ever passed up an opportunity to both educate the populace, and preach my own brand of Net-evangelism. So take heed before venturing further...

While involved in some heavy web-surfing in preparation for this article, I happened upon one of those gems of the Internet—a very nicely developed site that contains a rich cache of pointers to a variety of subject-related sites. This one is out of the University of Indiana (go Hoosiers!) Law School. I even managed to coerce a screen shot (Screen 1: Netscape) into the quite reasonable reproduction you seen on page 17.

Actually, I had a rather nefarious purpose in mind for causing the *Benchmarks* editor so much anguish by including my own graphics in my article this month. Compare the previous screen shot (of NetScape) with the one below it on page 17 (captured from a Microsoft Windows-based telnet session to my Sol account).

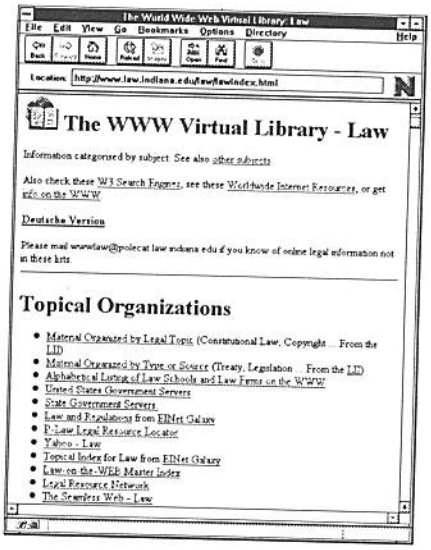
I wonder if anyone could identify the latter image as a screen shot of the Lynx web-browser pointing to the same site as the NetScape browser was in the former image?

I have one other set of screen shots to present to you before I start making my point more clearly. Screen 2: Netscape on page 18 provides a view of a Web site that should be near and dear to all of us. Its counterpart as it appears in Lynx is shown under it.

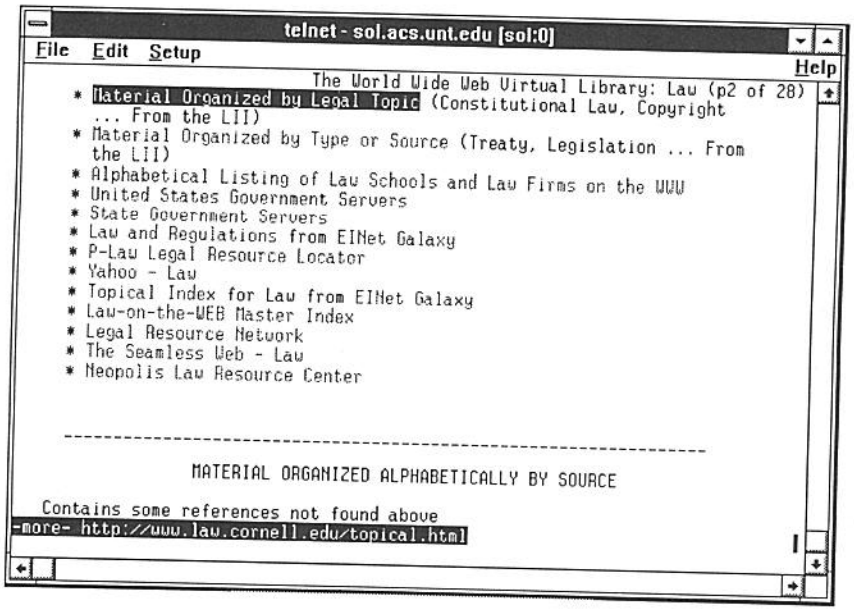
If you haven't guessed my point yet it is this: *the same information is available to you whether you are using a graphical web browser or a character-based one!* (And you don't have Gov. Bush's face staring at you.)

There is certainly no denying that the graphical interface is the more pleasant one to look at. I happen to be a very visually-oriented person, so I enjoy the graphical web-browsers as much as anyone—*when* I am in a browsing mood and not interested in finding some specific information.

For those of you who have a serious interest in the *content* of the information that is available via the Internet, as opposed to those who are interested in the *appearance* of that information,



Screen 1: Netscape



Screen 1: Lynx

I recommend that you take a closer look at the Lynx web-browser that is available on both Jove and Sol (the Computing Center's UNIX host machines.) It's fast; has just as many features as Mosaic, Netscape, et al (excluding the display of graphics); and it's readily accessible to anyone with an account via a dialup connection.

As always, I am available to answer questions and help with problems no matter what your preferred web-browser may be.

Legal Pointers

You can find a list of pointers on UNT's webserver at URL http://www.unt.edu/.scottslist/033.html and in addition to those sites that you will find referenced in the WWW Virtual Law Library highlighted previously, here is a sampling of a variety of subject-related resources:

❑ Mailing Lists

- COMP-ACADEMIC-FREEDOM-TALK

  Computers and Academic Freedom discussion list

  listserv@eff.org

  subscribe comp-academic-freedom-talk *firstname lastname*

- LAWSRC-L

  Internet Law Resources List

  listserv@fatty.law.cornell.edu

  subscribe lawsrc-l *firstname lastname*

❑ USENET Newsgroups

- alt.society.civil-liberties
- comp.academic-freedom
- misc.legal

❑ FTP

- Supreme Court Opinions

  ftp.cwru.edu/hermes

- Computer and Electronic Law Information

  sulaw.law.su.oz.au/pub/law

❑ Gopher

- Electronic Frontier Foundation

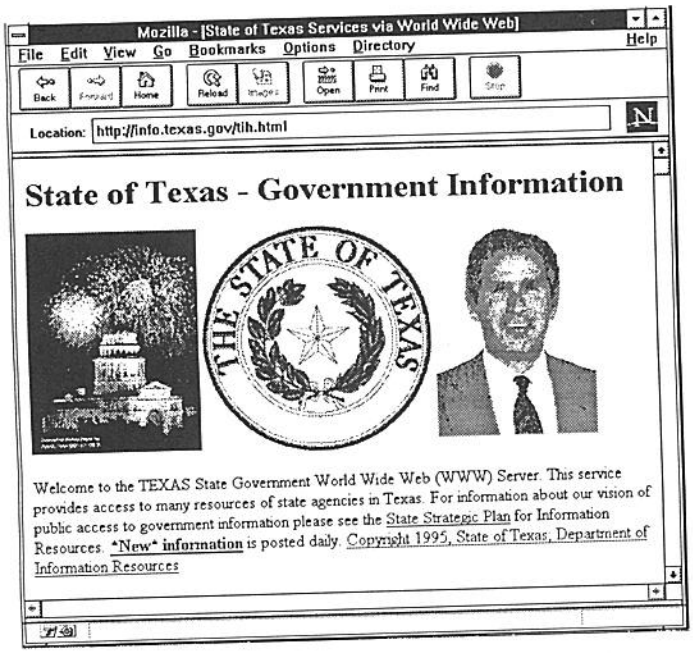
  eff.org

- Cornell University Law Library

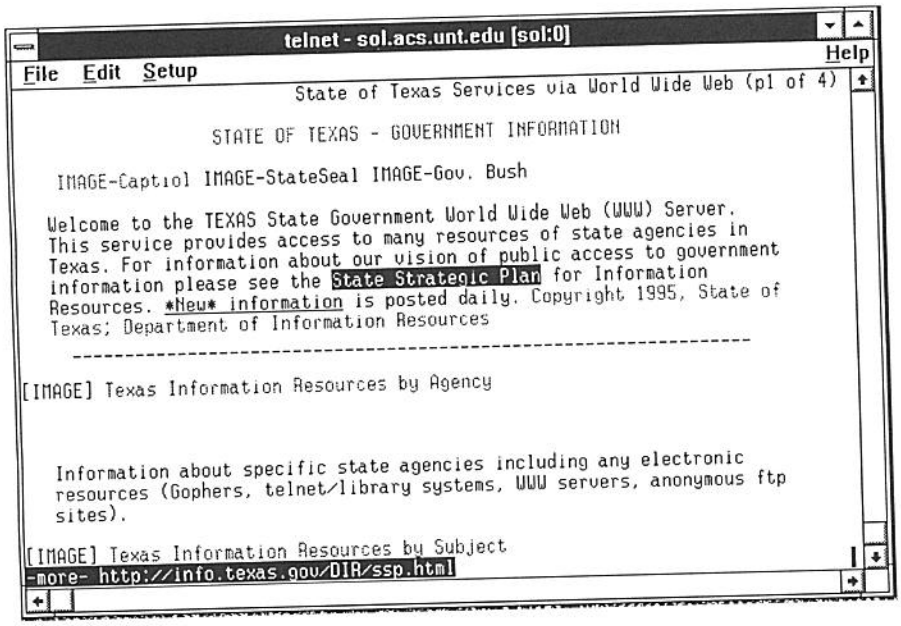
  fatty.law.cornell.edu

- US Department of Justice

  gopher.usdoj.gov



Screen 2: Netscape



Screen 2: Lynx

- Case Western Reserve University Law School

  holmes.law.cwru.edu

- Miscellaneous

  wiretap.spies.com

  (select Articles, Legal and Criminal then Waco Warrant to see the original search warrant for the Branch Davidian compound in Waco, Texas)

❑ **World Wide Web**

- Supreme Court decisions

  http://www.law.cornell.edu/supct/

- University of Indiana Law School - Journals

  http://www.law.indiana.edu/ ■

Sex and Violence in Cyberspace

Edupage (2/12/95), Originally appeared in the *New York Times* (2/1/95).

A University of Michigan student is in jail, charged with the federal crime of transporting threatening material across state lines. He had posted to the Usenet group "alt.sex.stories" a short story using the real name of one of his female classmates and describing the torture of a woman with a hot curling iron and her mutilation and sodomization while she is gagged to a chair. The student's arrest has been criticized by such privacy and civil liberties groups as the ACLU and EPIC, which argue that the authorities have encroached on the man's freedom of speech. The executive director of the Electronic Frontier Foundation says: "This young man posted it into a Usenet group that had other similar postings. They accepted it as a type of writing that was acceptable under their community standards.■

E-mail Violates Sunshine Laws?

Edupage (2/16/95), originally appeared in the Wall Street Journal (2/16/95).

Government officials exchanging E-mail with each other may be violating some states' open meeting laws. "Most agencies have not thought through E-mail in the light of public access. With E-mail, it's much easier for officials to unthinklingly toss out ideas and debate public business in private," says the director of University of Florida's Brechner Center for Freedom of Information. Florida law prohibits even two officials conferring privately on a policy matter. One California city council member is careful never to send any of her messages to more than three colleagues at once, because to do so would constitute a meeting of a majority of the nine council members. ■

A Web of Spies

Edupage (2/14/95), originally appeared in *Investor's Business Daily* (2/14/95)

The CIA has maintained an informational home page since last year, but now it's hoping to recruit engineers, economists and computer scientists via its server at http://www.ic.gov. The Agency warns would-be crackers that its site will be audited regularly, and will include alarms to notify officials of any suspicious activity. The new server will be completely separate from other CIA computers. ■

The Network Connection

By Dr. Philip Baczewski, Assistant Director, Academic Computing Services (baczewski@unt.edu)

This column is a continuing feature of ***Benchmarks*** *intended to present news and information on various aspects of wide area networks.*

"Ad" Nauseam

In recent months there has been quite a bit of attention paid to the topic of advertising on the Internet and it can be quite confusing to hear the chatter from various sides of the argument if you are not already familiar with all the issues involved in this subject. After all, the press seems to be falling over itself with "Information Superhighway" stories implying that within six months we will all be doing everything but our laundry on the Internet. With commerce coming to the Internet aren't advertisements just an expected part of the picture — an annoyance or a service, depending on your point of view? The answer to that question is "it depends..." — it depends on where the advertising occurs and how it is accomplished.

The Network of Networks

We are often tempted to treat the Internet as one huge object to be accessed or manipulated, however, if it were, we'd just call it "The Network." The Internet is a network of networks with common practices (protocols) supporting the inter-network transfer of electronic information. The various component networks of the Internet may have their own standards and practices as to the use of their networks. BITNET, for example, while not officially part of the Internet, is still responsible for much of the electronic mail traffic that is transmitted over the Internet. Many network mailing lists are still maintained on BITNET hosts, but with the advent of mail gateways on commercial on-line services and at business Internet sites, BITNET mailing list subscribers are no longer just BITNET users (and haven't been for quite some time). BITNET itself, however, remains a network devoted to the exchange of information in support of research and instruction.

World Wide Web (WWW) services are being provided by more and more companies on the Internet. Companies have found WWW to be an effective forum for providing information on their products and organization. Normal people call this advertising, but since companies employ lots of people with MBA degrees, they call it "marketing." Advertising in itself, then, is not intrinsically bad, especially if you desire the information and can retrieve only that in which you are interested. Unsolicited information which attempts to sway you to buy a particular company's product or service can be quite unwelcome whether it arrives as and electronic mail message, as an item in your postal mailbox (we call this junk mail), or as a phone call which interrupts that hot meal you've just put on the table. In relation to the Internet, advertising may be subject to the usage guidelines of a component network — some will ban it and some will allow it. Since the Internet is no longer exclusively a government-supported network for institutions of research and higher education, advertising in some forums may be quite copacetic.

Knowing the Nets

In spite of the sensitivity to advertising on some mailing lists, announcements and discussions of new products are common on many mailing lists and, in fact, many mailing lists are formed for just that purpose (even BITNET mailing lists). If you review the BITNET and NSFNet acceptable use policies (see page 14), you will find that both prohibit commercial or "for profit" use of their networks, including conducting commerce via those networks. Both specifically prohibit "advertising," but BITNET does permit "discussion of a product's relative advantages and disadvantages" and allows venders to respond to questions about their products. NSFNet also lists announcements of new products or services for use in research or instruction as an acceptable use.

Since most Internet traffic is no longer carried by NSFNet, policy issues in that regard may be moot (see page 15). Non-commercial product announcements seem to be acceptable within the bounds of applicable network policies. There is a large difference between announcing that a product is available and doing a widely-distributed mailing that sells a commercial service or product. The former is standard practice, and the latter causes a great deal of consternation among mailing list owners. Selling "ad space" to run on BITNET mailing lists would definitely be a violation of BITNET policies, since it would be, in effect, reselling network bandwidth.

Ban the Spam

Recently there has been a rash of commercial messages broadcast to multiple BITNET LISTSERV mailing lists. This practice is known in LISTSERV circles as "spamming," and has caused quite a bit of uproar among list managers and members (one list owner even wrote his congressman to suggest legislation against spamming). In more than one case, backlash against the messages has resulted in the quick loss of the perpetrator's privileges on the commercial service from which the messages originated. Spamming is the worst type of abuse of mailing lists. It not only sends unsolicited messages to those who don't want them (multiple copies if several of your lists are spammed), but it also adds an additional burden to mailing list traffic.

About a year ago, two lawyers broadcast a message to many mailing lists, causing enough fury to even merit note from the print media. After much retribution and some repercussions, they went on to write a book about advertising on the Internet. This seems the equivalent of those get rich quick ads that offer the secret to success for only five dollars, and it turn out the secret is to run ads which entice people to send you five dollars.

Thankfully, most on the Internet are sensitive to its appropriate use. If you have doubts about the propriety of a posting it is relatively easy to send a message to the list moderator or owner to ask if it is appropriate to the discussion (the list owner is usually identified in the welcome message you receive when you first subscribe to a mailing list). Matching the information to the forum will help achieve appropriate and efficient use of the Internet. ■

List of the Month

Each month we will highlight one BITNET, Internet, or USENET Special Interest Group (SIG) mailing list. This month's list...

Network Etiquette

netiquette via netiquette-request@albion.com

Owner: Seth Ross (seth@albion.com)

Netiquette: The Mailing List is devoted to network etiquette, the informal set of rules, civilities, and social graces that have evolved in cyberspace, the do's and don'ts of online behavior. What are the rules? How have they evolved? How can responsible net.citizens avoid breaches of Netiquette? How should we respond to the breaches of others? Is flaming an art and if so, how can it be mastered? What's being said about Netiquette on the net and in the media?

This unmoderated list is open to the networking public. It is sponsored by Albion Books, publisher of *Netiquette* by Virginia Shea.

To join Netiquette: The Mailing List, send E-mail to netiquette-request@albion.com with the following command in the subject field: subscribe Firstname Lastname

As a starting point, subscribers may wish to review the "Core Rules of Netiquette" document, a brief excerpt from the *Netiquette* book. To retrieve the document, send E-mail to netiquette-request@albion.com with the command "archive send core" in the subject field, like so: TO: netiquette-request@albion.com

SUBJECT: archive send core ■.

Viruses: If At First You Don't Succeed...

By Eriq Neale, ACS Lab Manager and Virus Protection Expert (neale@unt.edu)

From the "When it rains, it pours" department, it's time to assuage some fears and correct some misinterpretations. A little while back, there was a lot of talk about the "Goodtimes" virus that was supposedly spreading on America On-Line. I received about a dozen copies of E-mail messages warning people not to read a mail message on AOL with the subject "Goodtimes" because it was actually a virus that would infect your computer and do nasty things to you. Some of these messages were written by well-meaning people who tried to give their message a look of importance. Others were quick notes of warning to potential victims.

All of them were wrong

But the dust kicked up by this panic attack is still settling, with some unsettling consequences. In the remainder of this article, I'll try to address some of the biggest issues that have resulted from this incident, and, to entice the reader to read this article to its conclusion, I'll give you the sure-fire, no-fail method for keeping your computer system virus- and problem-free forever.

E-mail, Fast-food Rats, and Sewer Alligators

Let's clear the air first: the Goodtimes virus is fiction. It does not exist, and as far as we can tell, it never did. However, in a few short weeks, it achieved Urban Legend status. This status was achieved when computer support people made their best efforts to alert clients and potential clients about this alleged virus, and what began as probably a small joke exploded into a media circus not unlike what Michelangelo stirred up in 1991.

The premise of Goodtimes was this: someone sent out E-mail on AOL that contained a virus, and when you read the message, your computer became infected. First, your potential victims are AOL customers, because the virus was activated in the AOL mail reader (or so the story goes). Second, you rule out half of the AOL customer base, either Mac or PC users, because the virus could realistically only affect one of the two computer types. So, in contrast to Michelangelo, you've already limited the spread of the damage to several hundred thousand computers as opposed to several million.

Now let's tackle the heart of the matter. Can an E-mail message cause a mail reader to infect a computer running the mail reader with a virus? In short, no. A computer virus is executable code that replicates itself when run in the computer. So the e-mail message would have to contain a program (either Macintosh or MS-DOS) that the recipient computer would have to execute. Well, this can happen with the AOL mailer. Person A can E-mail a DOS executable to Person B on AOL by uploading the program into the mail message being sent. If the program Person A uploads is infected and Person B downloads the program and runs the program, then Person B will get infected. This same problem exists on every BBS system across the world, but we only hear of isolated incidents where an infected program is uploaded to a BBS for others to download. (We can thank proactive BBS operators for that, as the bulk of them check all uploads before making new files available.)

But this virus was to infect you when you read the e-mail. This means that the AOL client software would have to cause the computer to run a piece of computer program code contained in the E-mail message without asking the person running the client for permission. As far as we know, the AOL client, on any platform, cannot do such a thing. And, if someone had figured out *how* to do such a thing, I'd really like to know. It is possible that, in developing the clients, AOL left some "back doors" in the mailer program for testing that remain in the program today and that the E-mail message in question could somehow tap into this, but it's really, really unlikely.

"Suppose we built a giant badger..."

If Goodtimes did what everyone promised it would, it would actually be classified as a Trojan Horse and not as a virus. A Trojan Horse is a program or data file that purports to do one thing when it actually does another. One classic Macintosh example was the Sexy Ladies HyperCard stack. While the viewer would ogle over the images of bikini-clad models, the stack would quietly eat files off the computer's hard disk in the background. Goodtimes followed the same premise: you opened what you thought was E-mail, but instead something evil lurked inside and attacked when you opened it.

The Goodtimes scenario has brought about a renewed interest in other Trojan-related areas. One of the more interesting is a phenomenon called an ANSI bomb. On DOS systems, it is possible to reprogram function key actions at the DOS prompt through ANSI escape sequences. This is an old trick, actually, and one that many people have used to program frequently-used DOS commands into their keyboards. Unfortunately, malicious commands can be programmed into keyboards as well. It would be possible to change from repeating the last command entered to formatting the local hard disk when pressed.

Rest easy, though, for this is an uncommon thing. But one of the easiest distributions for this type of mischief is still download sites like BBSs, online services, and anonymous ftp. Recent versions of PKWare's PKZIP and PKUNZIP utilities have a feature that displays a text message when a ZIP file is uncompressed (actually, there are several programs that now offer this feature). As you may have guessed, miscreants have found ways to embed ANSI codes into these messages to have portions of the text appear in

color, or to reprogram function keys and the like.

How do you protect yourself from this threat? There are a couple of ways. One is to practice caution when downloading files, and this really should be one of the 10 Computer Commandments! PKWare supposedly has utilities that will examine the embedded comments in ZIP files for trouble codes. Or, you can remove ANSI from your PC altogether. If this is not really an option for you (it's not been one for me), you can use one of several ANSI emulators that do not support function key remapping (some of these tools are available on ftp.unt.edu).

This type of thing can happen on other systems, too. Emacs can recognize and execute lisp code included in the comments of a source file as the file is being opened for editing. Some Web browsers could be configured to automatically download and execute files from Web sites. And there are probably others that this author is not aware of (please forgive the poor grammar).

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Hopefully, you are now armed with more information about this than you really care to know and you realize that the situation is much less severe than you may have realized before. While these issues are concerns that need to be dealt with, a healthy case of paranoia can be reserved for a different situation.

I have to admit that I lied to you earlier. There is no single solution, no "one fix fixes all" tool that can be used to prevent computer disasters. But a good, regular backup will help prevent loss of data when a computer disaster occurs. It is inevitable that your computer will suffer some dastardly sort of problem that will cause loss of data. If you are prepared with a complete, recent backup of your system, your downtime should be kept to a minimum once you've identified and removed the problem. ■

F-Prot Updates

The current version of F-Prot available on the UNT Denton campus is 2.16. The software can be acquired from your server manager, or from the CC2 server in the **F:\LOGIN\PUB\F-PROT** directory.

File server managers should also note that Net-Prot has also been updated to version 1.29-2.16 to match the signature strings used in F-Prot 2.16. We have encountered some difficulty when using Net-Prot on a server running AppMeter, and also when running on a NetWare 4.x server. All other servers running 3.X of NetWare should load Net-Prot for added virus protection.

Net-Prot can be found on the SOFTWARE volume of CC2.

There have been a couple of virus incidents reported on campus recently. The viruses that have been encountered will be detected by F-Prot, should you run across them. ■

Academic Computing Offers Courseware Development Service

By Aaron Price, ACS Documentation Services Assistant (price@cc1.unt.edu)

Bringing technology to the classroom is becoming easier thanks to a new service being offered by Academic Computing Services. The Computing Center has begun working with other Academic departments at UNT to develop software platforms that students can use as supplementary learning tools for classes.

The designers of the programs will create interactive learning sessions consisting of information provided by the instructor of a particular class. Students can then use these programs at their own pace to learn and study the material.

Beginning last summer The Computing Center has been working with Professor Allen Jackson of the Department of Kinesiology, Health Promotion and Recreation to develop a software platform that would supplement the teaching of PHED 1000, *Scientific Principles and Practices of Health-Related Fitness*.

This projest is funded by a grant Professor Jackson secured and by matching funds provided by the Computing Center. The project is targeted to be completed by August of 1995.

"We want to create a computer supplement to the lecture material. We are taking material from lecture notes and creating an interactive lesson guide," Neale said. This lesson guide will cover all of Jackson's lessons.

Dr. Jackson provides an outline of the information that is to be included to project designer Jenny Jopling. She takes that information plus notes from classroom lectures and designs screen layouts that are given to Eriq Neale. Jopling uses multimedia programs such as Photoshop, Superpaint, Premiere, Corel Draw, Harvard Graphics, and others to design the pages and graphics. She plans to work with Cad and 3D-Studio for 3D computer animation on a future project.

In the next step Neale programs the screen layouts on a Macintosh using Authorware and then gives those to Joseph Hoffmann. It is Hoffmann's job to convert the Macintosh programs to IBM-PC format and make the changes and updates needed on both the Macintosh and PC platforms.

When the project is completed, students taking the class will be able to use the program in a computer lab or check out a CD-ROM disk containing the material for use on home computers. If students prefer this learning method they can use the software to actually replace those lectures.

It will also help solve the problems of overcrowded classrooms by allowing students more freedom to learn material on an individual basis.

"We are focusing on the core subjects since they are typically the larger size classes. Software is more personal than a classroom with 500 people. This provides students with the benefit of a professional expert and it won't monopolize the time of teachers with large-scale classes," Dr. Philip Baczewski, Assistant Director of Academic Computing, said.

The Computing Center is also involved in developing an interactive program with the School of Rehabilitation. However, this program does not focus on a single class but on five different disabilities as an assistance tool to train counselors.

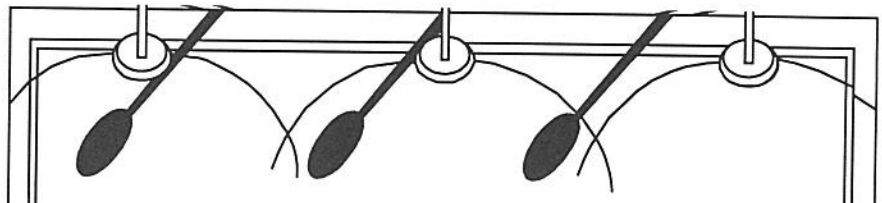
The first segment, about deafness and hearing impairment, is due to be completed by August of 1995. The following four segments are scheduled to be completed over the next two years. This program will be distributed to other institutions of higher learning and to the Texas Rehabilitation Commission field offices throughout the state.

"These are our first projects and we hope they will be a springboard to show others what we can accomplish and get some interest from others," Neale said.

The Computing Center Interactive Learning DevelopmenTeam consists of Eriq Neale, Joseph Hoffmann, and Project Manager Jenny Jopling. The Managerial Steering Committee consists of Dr. Philip Baczewski, Assistant Director of Adacemic Computing (baczewski@ unt.edu) and Dr. Paul Gandel, Senior Director of Academic Computing (gandel@unt.edu).

Contact Jenny Jopling (565-4462) if you are interested in this new program. She will be glad to answer any questions you may have. The Computing Center will also help with locating funding for any projects undertaken.

The next issue of *Benchmarks* will feature more information about this project and interactive multimedia program development. ■



1995 Spring Short Courses

Academic Computing Services
University of North Texas
Computing Center

❑ **Registration** — Academic Computing Services is offering the following short courses for the remainder of the 1995 spring semester. Please preregister to attend. You may either fill out the form attached to this document or register on-line via Gopher. If registering via Gopher, the form can be found in the path: UNT Departments, Schools, and Colleges/Computing Center/Short Courses. (Call 565-2324 if you have questions about Gopher.)

❑ **Eligibility and Class Size** — Faculty and students have first priority to register for these classes. A maximum of 10 people will be admitted to each of the courses held in ISB 110 and ISB 235. A maximum of 15 people will be admitted to each of the courses held in Chilton 255 and ISB 201. *Academic Computing Services reserves the right to cancel any course that has 5 or fewer people registered 3 days before the course is scheduled.*

❑ **Hands-on Classes — All persons registering for hands-on (ISB 110, Chilton 255) HDS and/or UNIX courses should have current User-IDs for the system to which the course applies.** Applications for User-IDs are available in the Computing Center main office (ISB 119). It takes several working days for a User-ID to be activated.

HDS, VAX, and UNIX Courses

❶ **Intermediate UNIX on Sol and Jove** – This course is recommended for individuals who are familiar with UNIX and want to learn more about using it on Sol and Jove. **You must have a current Sol or Jove User-ID to take this class.**

A two-hour session to be held in the Chilton General Access Lab (Chilton 255):

Date	Time	Instructor
Tuesday, April 4	2-4 p.m.	Staff

Statistical Package Courses

❶ **Introduction to SPSS on Windows** – This course is recommended for individuals who plan to use SPSS on a PC using Windows.

A two-hour session, held in the Science Library(ACS General Access Lab, ISB 110):

Date	Time	Instructor
Thursday, April 6	2-4 p.m.	Panu Sittiwong

Wide Area Network & Information Systems Courses

❶ **Introduction to Internet Tools on CMS** – This course is intended for people who are actively using the CMS system and want to take advantage of the Internet tools that are available on that system. The course will cover sending Internet mail from CMS (including subscribing to mailing lists), using CMS TCP/IP tools such as FTP and TELNET, reading USENET News on CMS, using Gopher, and other topics. **Knowledge of CMS is required for receiving the most benefit from this course.**

A two-hour session held in the ISB 201, an SLIS classroom:

Date	Time	Instructor
Friday, April 14	2-4 p.m.	Philip Baczewski

❷ **Introduction to Internet Tools and Techniques** - The Internet is a collection of related computer networks that link almost a million computers throughout the world. This course will cover file transfer, remote login, use of on-line library catalogs at other universities, Archie, Gopher, and many other Internet topics **except** electronic mail and USENET News. **Prior knowledge of at least one of the following interactive operating systems is required: CMS, UNIX, MS-DOS.**

Two one and one half-hour sessions held in the Chilton General Access Lab (Chilton 255):

Date	Time	Instructor
Thursday, March 30	2:30-4 p.m.	Staff
Friday, April 7	1:30-3 p.m.	Staff

❸ **Introduction to Internet Services: Gopher, WWW (Mosaic), NEWS and Others** - This course covers the use of various campus and Internet-wide browsing tools including Gopher, the World Wide Web and USENET NEWS. Emphasis on searching for information, proper use of these tools and tips on making your own information available to others on the Internet. This class will not concentrate on specific clients as much as concepts. The "Introduction to

Please see **Courses** on page 25.

Benchmarks Online

Back issues of *Benchmarks* are now available on the UNT Webserver (http://www.unt.edu/). They can either be accessed from the UNT Home Page or by going directly to:

http://www.unt.edu/UNT/departments/CC/Benchmarks/benchmarks_html/

The issues are being archived in a "last in, first out" manner. The last issue of *Benchmarks* produced is always converted to html before work is continued on the conversion of previous issues. Links to other issues and resources on the Internet are inserted during the conversion process.

It is our hope that *Benchmarks Online* will be a valuable asset to the University community. Send any comments/questions about this project to Claudia Lynch, *Benchmarks* Editor (lynch@unt.edu). ■

Peak Hour Access of Jove

By Amos Gouaux(amos@unt.edu)

As many already know, we are getting a lot of complaints that folks are not able to login via the dialups to do their homework because all the phone lines are busy.

The Administration is currently considering several proposals to expand the dialups. However, until a decision is made, we ask that folks be particularly careful about their use of the dialups between the peak hours of 6:00PM-10:00PM, Sunday-Thursday. Please reserve this time for your most urgent UNT course or research-related activities. It would be very helpful if activities of a more recreational nature could be conducted outside of this peak time. ■

Determining if You Have Metro Line Access

By Claudia Lynch, *Benchmarks* Editor
(lynch@unt.edu)

Sometimes people think they should have access to the UNT Metro Lines but find themselves incurring long distance charges. We hope that this article will clear up some confustion about the Metro Lines.

First of all, **any time you dial 1+ (1+214) or (1+817) your are initiating a long distance call!** According to Tom Newell, UNT Telecommunications Manager, "the [Metro] numbers are not true Metro lines, but rather local Keller (817 side) and Lewisville (214 side) numbers. These two numbers cover virtually all of the metro calling area but require two different numbers." **If you can't call Keller or Lewisville locally then you can't call our number either.**

According to Newell, "There should be virtually no one left out of the traditional Metro area calling plan except in some very unique dialing plans (ie: people in Denton with GTE premium service can actually call either number free but they could not call a SWB metro number free). Because of those uniquenesses I would recommend they ask their local phone company if they can call local (not metro) Keller (for people in 817) or Lewisville (214 area) numbers free."

Newell recommends your do the following to determine if you have Metro line access:

- ❑ Try dialing the call just area code and number (i.e. 817-337-0063 or 214-221-0059) WITHOUT A 1+. Some limited areas may still allow dialing only the seven digit number (i.e. 221-0059) if they are inside the same area code (i.e. 214).

Please see **Metro** on page 26.

Courses continued from page 24.

Internet Tools and Techniques" courses are recommended for specific computing platform information.

A two-hour session held in ISB 201, an SLIS classroom:

Date	Time	Instructor
Friday, April 21	2-4 p.m.	Doug Bateman

❹ **Creating a Home Page: Introduction to HTML Authoring** - This course covers the use of HTML (a formatting language) to produce text that can be read by various World Wide Web (WWW) clients on the Internet. Familiarity with WWW concepts recommended.

A two-hour session held in the Chilton General Access Lab (Chilton 255):

Date	Time	Instructor
Thursday, April 27	2-4 p.m.	Doug Bateman

❺ **Introduction to Internet Tools and Techniques on the Mac** - This course covers Internet tools and techniques that are unique to the Macintosh environment. **Prior experience using a Macintosh is required.**

A two-hour session, held in the Science Library (ACS General Access Lab, ISB 110):

Date	Time	Instructor
Tuesday, March 28	2-4 p.m.	Sean McMains

Microcomputer Courses: General

❶ **Introduction to Microcomputers & DOS** - This class covers the hardware components of a personal computer (PC), the equipment used on campus, and different types of software. The final part of the class will deal with simple DOS commands needed when operating a PC (FORMAT, COPY, DIR, RENAME, DEL, ERASE, TYPE, CHKDSK, VER). **You need to bring a 3 1/2" or 5 1/4" *high-density* diskette to be formatted.**

A three-hour session, held in the Chilton General Access Lab (Chilton 255):

Date	Time	Instructor
Tuesday, April 18	2-5 p.m.	Sean McMains

❷ **Introduction to Windows 3.1** - This course provides an introduction to the Windows 3.1 operating environment. Emphasis will be placed on using the mouse, control panel, and file manager.

Three three-hour sessions, held in the Chilton General Access Lab (Chilton 255):

Date	Time	Instructor
Tuesday, April 25	2-5 p.m.	Sean McMains

❸ **Introduction to Pegasus Mail** - This course is recommended for people, especially faculty and staff, who want to learn about using Pegasus Mail (Pmail) to communicate with others on campus and via the Internet.

A three-hour sessions, held in the Chilton General Access Lab (Chilton 255):

Date	Time	Instructor
Tuesday, April 11	2-5 p.m.	Sandy Burke, Andy Mears

❹ **Don't Get Stoned: Computer Viruses and You** - This course is recommended for anyone who uses a microcomputer and wants to protect their software and data against viral infections.

A two-hour session, held in ISB 201, an SLIS classroom:

Date	Time	Instructor
Friday, March 31	2-4 p.m.	Eriq Neale

Microcomputer Courses: WordPerfect

❶ **Advanced WordPerfect for Windows: Merge** - This course will cover creating a form letter and a list of individuals to send it to. It will also cover the use of the envelope feature. **Prior Knowledge of WordPerfect 6.0 for Windows basic commands required.**

Two three-hour sessions, held in the Chilton General Access Lab (Chilton 255):

Date	Time	Instructor
Thursday, April 13	2-5 p.m.	Sandy Burke
Tuesday, May 2	2-5 p.m.	Sandy Burke

❷ **Advanced WordPerfect for Windows: Draw, Chart** - This course will cover the use of the Draw package included with WP 6.0 and the Charting Editor. You will create some graphics, and edit others. **Prior knowledge of WordPerfect 6.0 for Windows basic commands required.**

A three-hour session, held in the Chilton General Access Lab (Chilton 255):

Date	Time	Instructor
Tuesday, May 16	2-5 p.m.	Sandy Burke

❸ **Advanced WordPerfect for Windows: Tables, Math** - This course will cover creating tables, manipulating tables, making a table from a spreadsheet file, and using the math features within tables. **Prior knowledge of WordPerfect 6.0 for Windows basic commands required.**

Please see **Courses** on page 27.

Metro continued from page 25.

- ❑ If you get a recording, "can't complete the call," etc. then it is most likely a long distance call for you.
- ❑ If you still think it should be a local call then:
  - Check with your local phone company or the map in your local directory or
  - If **ALL ELSE FAILS**, give the Computing Center your complete home telephone number and we'll try to check it out.

■

UNT Newsgroups

By Aaron Price, ACS Documentation Services Assistant (price@cc1.unt.edu)

Be sure not to miss out on the discussions and information available on UNT's own Usenet newsgroups! Through the Internet you can access over sixteen newsgroups that are specifically designed for discussion of UNT related issues. These newsgroups are a part of the Usenet selection that you can access from Jove or Sol (using TIN), CMS (using NNR), and through the Novell network (using Trumpet for Windows).Here is a quick rundown of what they are and their individual topics.

- ❑ **unt.general** — This is the granddaddy of the UNT newsgroup hierarchy. Here you can discuss almost anything related to UNT from Denton restaurants to United States politics. Serious campus debates can be found here alongside coffeehouse style chit-chat. Some announcements sent over Word Perfect Office Mail are also posted here for those who do not have WPOM accounts. If you are not sure where to post a message then a good safe bet would be this newsgroup.

- **unt.test and unt.test2** — If you are new to Usenet or are having trouble with Usenet this is were you go to test your newsreader. By keeping all test posts to this newsgroup you free up clutter from the other groups and that allows for better discussion.
- **unt.news.discussion** — Here the discussion centers on the Usenet hierarchy that UNT supports. You can find out about other existing or new newsgroups, ask questions about Usenet, and basically discuss anything relating to Usenet. In addition, discussion for the creation of new newsgroups takes place here.
- **unt.critique.teachers** — This is one of the more unique newsgroups because you can post anonymously to it. Critical reviews of good and bad instructors can be offered and found here for those not sure of whose class to sign up for. To post anonymously send your post via E-mail to: unt-critique-teachers@unt.edu The E-mail will be posted anonymously to unt.critique.teachers. It will only work on this newsgroup.
- **unt.events** — Want to know what is happening in the local music scene? Perhaps you would like to take a date to the next play performed by the Drama department but don't know where to get tickets? On this group UNT organizations can advertise upcoming public events and you can discuss any past or future events.
- **unt.networking** — Discussions here focus on the local UNT network consisting of topics that could include Jove , dialup lines, e-mail, and many, many others.
- **unt.org.irc.general, unt.org.irc.announcement, unt.org.irc.ipg, unt.org.irc.rpg, unt.org.irc.spg, unt.org.irc.cpg, and unt.org.irc.apg** — All of these groups relate specifically the Information Resources Council and it's policies.
- **unt.org.grad-students** — The name says it all. In this group graduate students can discuss topics pertaining to graduate studies.
- **unt.class.*** — A specific newsgroup is created for teaching purposes for some Computer Science classes. In these groups, students in the particular class are given assignments or instructions. The format for the newsgroups usually follows this example: unt.class.semesteryear.department.course-section ***or*** unt.class.spring95.csci.4450-002
- **unt.sas** — Discussion of SAS related software and operations takes place here.
- **unt.org.mac-users** — If you have question about Macintosh computers then this is the place for you. The Macintosh User's Group meeting minutes are posted here.

If you have an idea for a newsgroup that you feel UNT should create, send E-mail to news@unt.edu with your suggestion. A discussion will then be created on unt.news.discussion and after a short period a vote will be taken. If the suggestion passes then it will be added assuming it follows normal Computing Center guidelines. ■

Courses continued from page 26.

Two three-hour sessions, held in the Chilton General Access Lab (Chilton 255):

Date	Time	Instructor
Wednesday, March 29	9 a.m.-Noon	Sandy Burke
Tuesday, May 9	2-5 p.m.	Sandy Burke

Novell ICT Program at UNT

By Mike Wright, Microcomputer Computer Systems Manager (wright1@cc1.unt.edu)

Institutions of higher learning begin to be recognized by their peers and the world around them when they are able to offer programs, services, learning, and other offerings which present both an element of uniqueness and are not easily reproducible. With this in view, it is noteworthy that the University of North Texas can announce that it now has in place the only program of its kind at an institution of higher education in the State of Texas - the Novell ICT program.

Over the last few years, UNT has developed a sophisticated Novell network to bring networked micro-computing to the desktop of all faculty and staff as well as to students through the General Access Labs. During the same period, however, the training of the network managers and other network support staff has been limited primarily to on the job training. With that in mind, the Computing Center set off on a mission in 1993 to bring to the University a complete training program that would produce certifiable network managers, thus guaranteeing that the already complicated technology currently in place would be able to be upgraded and enhanced in years to come. The obvious benefits from such an undertaking would be:

- improved individual network management skills.
- enterprise-wide network management abilities.
- a considerable cost savings to the University over the per-student prices of commercially available courses.

The Computing Center first looked to Novell for a solution because the University's network infrastructure was built upon their platform. After a number of false starts and trips down

blind alleys, it was discovered that Novell offered a small but unique program to colleges and universities called the Internal Campus Training program or ICT. The ICT is a very limited program. Only the staff and faculty of the institution who directly support the network and its operations are eligible for training.

After getting through the legal hurdles and overcoming numerous changes in the program's structure by Novell, UNT was finally approved in the summer of 1994 to offer the training for NetWare 4.X, the latest operating system available which features enterprise-wide network management. The next step was to have some staff members certified as CNIs (Certified Novell Instructors) in the courses which needed to be taught to the network managers. In doing so, these courses then would be recognized by Novell as their own and the attendees could gain CNE certification by passing independently administered exams. **Ovee Rahman** of the Computing Center and **Abraham John** of the Division of Student Affairs were selected to become the trainers of record.

To become a CNE, certain minimum scores must be achieved on each of the seven courses offered in a given curriculum. To become a CNI, a much more rigorous standard is applied. First, the candidate must achieve significantly higher scores than those of CNEs on their exams. In addition, each candidate must adequately demonstrate content mastery and Novell approved teaching techniques to Novell itself through an Instructor Performance Evaluation. Through a strict grading process, incredibly high standards for teaching technique, and an extremely short period of presentation preparation time, Novell is able to exercise a great degree of latitude in selecting only the best possible candidates to represent them as trainers in the field. It is therefore with a great degree of satisfaction and pride that University can announce that both Ovee and Abraham have been accepted into this elite group of trainers. ■

Training for Network Managers

By Mike Wright, Microcomputer Computer Systems Manager (wright1@cc1.unt.edu)

Training on the new NetWare 4.1 operating system has already begun with the first group of network managers having started on February 20, 1995 for three full weeks of courses. The initial offering includes four courses which provide a base for understanding the new operating system. These courses are:

- NetWare 4.X Administration,
- NetWare Directory Services Design,
- NetWare 4.X Installation & Configuration,
- NetWare 4.X Advanced Administration.

After a series of these courses have been offered to the network managers, the two remaining courses will be taught. They are:

- NetWare Service and Support
- Networking Technologies.

The cost of training each network manager is approximately 1/20 of what a student would pay for these courses in the market place. This translates into a cost savings to the University of more than 95% per student over prices of commercially available courses. Each attendee receives a certificate upon completion of each course and may then take Novell's nationally administered test at an independent testing site for CNE certification.. Each test costs $85.00 for which the students must pay themselves. If they achieve the necessary minimum score on all the tests in a curriculum, they will be awarded their CNE by Novell.

The classes are being held in a new training facility in the Information Sciences Building jointly created by the School of Library and Information Sciences and the Computing Center (ISB 203). The facility, which has state of the art equipment, is designed in such a way as to present the best possible combination to the learner of instructor-led software training and classical lecturing.

This kind of effort by the University to provide the technical training needed to maintain its strategic technical infrastructure demonstrates to its peers and to the community at large that we value not only what we can do to educate and empower others but we also value what we can do to further the technological understanding of our own. Through programs such as these, the University of North Texas continues to demonstrate its technological leadership as it moves into the twenty-first century. ■

Staff Activities

Publications and Presentations

❑ **Dr. Panu Sittiwong**, Research and Statistical Support Manager for ACS, and Dr. C. Neal Tate, Political Science Regents Professor presented a paper titled "Describing and Explaining the Changing Caseload of the Canadian Supreme Court, 1875-1990" at the Annual Meeting of the Southwest Association of Canadian Study February 23-25, 1995. The meeting was held in Denton this year. ■

Information Resources Council News

Minutes provided by Sue Harrison, Recording Secretary

IRC Regular Voting Members: *Ray von Dran, Library and Information Sciences (Chair); Cengiz Capan, College of Business; Carolyn Cunningham, Student Affairs; Paul Dworak, College of Music; Brian Forsman, UNTHSC Information Resources Council; Chuck Fuller, Fiscal Affairs; Larry Gleeson, School of Visual Arts; Don Grose, Libraries; David Hartman, School of Community Services and School of Merchandising and Hospitality Management; Sam Magill, UNTHSC Director of Information Technology Services; Steve Miller, Administrative Affairs; Tom Newell, Telecommunications (Ex-officio); Don Palermo, Academic Administration; Jean Schaake, College of Arts and Sciences; Paul Schlieve, College of Education; Ronald Sutcliffe, Graduate Student Council; John Todd, Faculty Senate; Virginia Wheeless, Associate Vice President and Director, University Planning and Institutional Research; Steve Williams, Undergraduate Student Association.* ***IRC Ex-officio Nonvoting Members:*** *Bill Buntain, Computing Center; Jim Curry, Microcomputer Maintenance Shop; Paul Gandel, Computing Center; Richard Harris, Computing Center; Coy Hoggard, Computing Center.*

February 21, 1995

Strategic Plan

Richard Harris distributed the final draft of the State Strategic Plan, a copy of which had been given to President Hurley, and which is on file in ISB 235.

GroupWise Report

Bill Buntain reported on the status of GroupWise E-Mail implementation. He explained that the E-Mail Commission stated in its final report that a centrally administered mail system was desired. Therefore, Bill and his group met with the vendor, Novell, to determine exactly what that would mean, and to get their input as to how a campus mail system should be architected and managed. Novell's recommendation for several scenarios presented to them was to establish a central mail domain for campus, which would be centrally managed. Distributed areas would be responsible for user management, and set-up of users in their respective areas.

Bill explained that there is a student mail system provided through ACS; and colleges will still be able to establish student e-mail in their own domains. At the present, Bill is waiting for responses from Novell to some questions he presented to them regarding design issues. A pilot plan for implementation has been sketched out with the Computing Center being brought up first as a test, then bringing in College of Education, School of Community Service, Music, with College of Business, Arts & Sciences and Adminstration Building being brought on-line by May 1.

Some administrative issues are guidelines for retention of E-mail, and training. Since all of the courses needed are not presently being offered, Bill is talking with Novell about the possibility of sending our E-Mail Specialist to Utah to work with their people.

Discussion followed on the subject of E-mail retention, which indicated the complexity and sensitive nature of this subject. Don Grose said he would discuss the issue with the University Archivist. There was also some discussion regarding the need for a clear management structure for the E-mail system on campus, including the internet system, and for the communication of that structure to all LAN Managers. It was also pointed out that when changes are made to the E-mail system, that also needs to be communicated to LAN Managers. Richard Harris stated that he would be responsible for making sure that happens.

Communications Program Group

Bill Buntain reported for the Communications Program Group that Novell has come out with a new licensing arrangement that will significantly change the way UNT handles their products. The new arrangement will allow UNT to obtain not only WordPerfect products, but also Novell Netware products without having to track the number of copies. In addition, faculty, staff, AND students can take a copy home as well as have a copy on a computer at their office on campus. The cost of the new license will be $120,000 with an additional $40,000 for student licenses. Bill explained that he will be negotiating with Novell to try and apply what UNT has already paid into the current program.

Dialup Services

Bill distributed a Proposal for Funding Expansion of UNT Dialup Services. He explained that he had put basic factors in this document for making a decision about funding the proposal but he did not believe a decision could be made at the level of the program group. He encouraged everyone to read through the proposal, looking at all of the possible solutions. Discussion followed during which it was agreed that there is a great demand for more dialup service, that a fee increase will not be looked upon favorably by the administration, and that a decision needs to be made soon. ■

ICPSR Summer Program Schedule, 1995

UNT is a member of the Inter-University Consortium for Political and Social Research (ICPSR). For a copy of the 1995 ICPSR Summer Program brochure and application, contact: ICPSR Summer Program, P.O. Box 1248, Ann Arbor, MI 48106-1248, Phone: (313) 764-8392. You also can contact Dr. Panu Sittiwong at (817) 565-2140 or stop by the Computing Center (ISB-119) for more information.

First Session (June 26-July 21)

LECTURES

- Basic Mathematics Mathematics for Social Scientists
- Nonlinear Systems I: Model Specification
- Introduction to Computing
- Advanced Topics in Social Research*

WORKSHOPS

- Quantitative Historical Analysis
- Mathematical Models: Game Theory
- Regression Analysis
- Scaling and Dimensional Analysis
- GIS/Spatial Data Analysis
- Introduction to Statistics and Data Analysis I
- Introduction to Regression Analysis
- Multivariate Statistical Methods
- Maximum Likelihood Estimation

ONE-WEEK WORKSHOPS

- Hierarchical Linear Models
- Logit and Log-Linear Models
- "LISREL" Models: Introduction
- Wisconsin Longitudinal Study Meta Analysis
- Criminal Justice Methodology and Analysis: Crime in Community Context
- Network Analysis
- "LISREL" Models: Intermediate
- Management of Machine-Readable Social Science Information

Second Session (July 24-August 18)

LECTURES

- Introduction to Computing
- Matrix Algebra
- Advanced Topics in Social Research*
- Nonlinear Systems II: Chaos, Catastrophes, and Visualization
- Dynamic and Longitudinal Analysis

WORKSHOPS

- Simultaneous Equation Models
- Time Series Analysis
- Introduction to Statistics and Data Analysis II
- Advanced Analysis of Variance
- Quantitative Analysis on Latin America
- Regression Analysis
- Mathematical Models: Rational Choice
- "LISREL" Models: General Structural Equations
- Quantitative Analysis of Crime and Criminal Justice

***ADVANCED TOPICS**

- Resampling Techniques: Jackknife and Bootstrap
- Missing Data Analysis
- Nonparametric Regression
- Using the Internet
- Graphical Presentation and Analysis of Data
- Data Visualization
- Bayesian Modeling
- Causal Inference

Computing Center Short Course Registration Form

Please complete this form and return it **AS SOON AS POSSIBLE** if you wish to attend any of the short courses listed below. You may also register on-line via Gopher or over the phone by calling (817) 565-2324.

NAME:_____ FACULTY ___ STAFF ___ STUDENT ___

DEPT:_____ UNDERGRADUATE ___ GRADUATE ___

PHONE:_____ MAILING ADDRESS: _____

SSN:_____ USER-ID:_____

✔	Course	Date	Time	Location
	Introduction to Microcomputers & DOS	Tuesday, January 17	2-5 p.m.	Chilton 255
	Introduction to Microcomputers & DOS	Tuesday, April 18	2-5 p.m.	Chilton 255
	Transition WordPerfect 5.1 to 6.0 for Windows	Wednesday, January 18	9 a.m.-Noon	Chilton 255
	Introduction to Windows 3.1	Thursday, January 19	2-5 p.m.	Chilton 255
	Introduction to Windows 3.1	Tuesday, February 28	2-5 p.m.	Chilton 255
	Introduction to Windows 3.1	Tuesday, April 25	2-5 p.m.	Chilton 255
	Introduction to Pegasus Mail	Tuesday, January 24	2-5 p.m.	Chilton 255
	Introduction to Pegasus Mail	Tuesday, April 11	2-5 p.m.	Chilton 255
	Introduction to WP 5.1 + (DOS)	Tuesday, February 7	2-5 p.m.	Chilton 255
	Introduction to JCL	Monday, January 30	2-4 p.m.	ISB 235
	Introduction to CMS	Tuesday, January 31	2-4 p.m.	Chilton 255
	Introduction to CMS	Friday, March 3	2-4 p.m.	Chilton 255
	Introduction to SAS	Wednesday, February 1	2-4 p.m.	ISB 110
	Introduction to SAS	Monday, March 6	2-4 p.m.	ISB 110
	Introduction to SPSS	Thursday, February 2	1-4 p.m.	ISB 110
	Introduction to SPSS	Wednesday, March 8	1-4 p.m.	ISB 110
	Introduction to UNIX on Jove and Sol	Friday, February 3	1-3 p.m.	Chilton 255
	Introduction to UNIX on Jove and Sol	Tuesday, March 21	2-4 p.m.	Chilton 255
	Introduction to Macintosh for Students	Monday, February 6	1-4 p.m.	ISB 110
	Introduction to E-Mail & Discussion Groups on UNIX	Wednesday, February 8	2-4 p.m.	ISB 110
	Introduction to SPSS PC+	Thursday, February 9	2-4 p.m.	ISB 110
	Introduction to Internet Services: Gopher, WWW, NEWS	Friday, February 10	2-4 p.m.	ISB 201
	Introduction to Internet Services: Gopher, WWW, NEWS	Friday, April 21	2-4 p.m.	ISB 201
	Introduction to SAS: CMS, DOS & UNIX	Tuesday, February 14	2-4 p.m.	Chilton 255
	Introduction to WP 2.0/ Presentations Overheads	Wednesday, February 15	9 a.m.-Noon	Chilton 255
	Introduction to PC E-Mail & Discussion Groups	Friday, February 24	1:30-4 p.m.	ISB 201
	Introduction to SAS: Windows, OS/2 & X-Window	Tuesday, March 7	2-4 p.m.	Chilton 255
	Introduction to Internet Tools & Techniques on the Mac	Tuesday, March 28	2-4 p.m.	ISB 110
	Introduction to Internet Tools & Techniques	Thursday, March 30	2:30-4 p.m.	Chilton 255
	Introduction to Internet Tools & Techniques	Friday, April 7	1:30-3 p.m.	Chilton 255

✔	Course	Date	Time	Location
	Advanced WordPerfect for Windows: Math/Tables	Wednesday, March 29	9 a.m.- Noon	Chilton 255
	Advanced WordPerfect for Windows: Math/Tables	Tuesday, May 9	2-5 p.m.	Chilton 255
	Don't Get Stoned: Computer Viruses and You	Friday, March 31	2-4 p.m.	ISB 201
	Intermediate UNIX on Jove and Sol	Tuesday, April 4	2-4 p.m.	Chilton 255
	Introduction to SPSS on Windows	Thursday, April 6	2-4 p.m.	ISB 110
	Advanced WordPerfect for Windows: Merge	Thursday, April 13	2-5 p.m.	Chilton 255
	Advanced WordPerfect for Windows: Merge	Tuesday, May 2	2-5 p.m.	Chilton 255
	Introduction to Internet Tools on CMS	Friday, April 14	2-4 p.m.	ISB 201
	Creating a Home Page: Introduction to HTML Authoring	Thursday, April 27	2-4 p.m.	Chilton 255
	Advanced WordPerfect for Windows: Draw/Chart	Tuesday, May 16	2-5 p.m.	Chilton 255

Get A Subscription to Benchmarks

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